NOLOGY DEPARTMENT

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TEXTILE WORLD

McGraw-Hill Publication ---------- MAY • 1948

Beginning a new department:

POINTERS FOR SUPERVISORS

By GLENN GARDINER

Page 154

DIRECT SPINNER for Tow Produces Fine, Strong Yarn

A new type of rayon yarn with interesting properties is being produced directly from continuous-filament rayon tow on Saco-Lowell's new direct spinner. A description of the machine and of properties of yarn produced starts on..page 114

CONE-WINDING TASK Easily Computed From Data

Wool-coning operations can be made more efficient and economical if task assignment, standard production, and piece-work rate are based on a job analysis and time study. For details on how job loads should be computed see.....page 118

Tensitrol Development Permits TENSIONLESS PROCESSING

Even the most delicate fabrics can be processed through finishing operations at high speed without tension by a new development that may prove a fundamental contribution to future progress of the industry. Details will be found on...page 145

"You're Right!

Your Business Is Different!"

Each business has its own peculiar problems.

That is why Commercial factoring is so flexible —a modern method of financing—suited to your particular needs. Immediate working capital is made available through your accounts receivable. Cash is forwarded to you as shipments are made. Yet you sell on your regular terms. Credit losses and collection expense are assumed by us.

Let us tell you how Commercial factoring increases turnover and profits.

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EUGENE G. LYNCH, 80 FEDERAL STREET, BOSTON, MASS.
T. HOLT HAYWOOD, WINSTON-SALEM, NORTH CAROLINA

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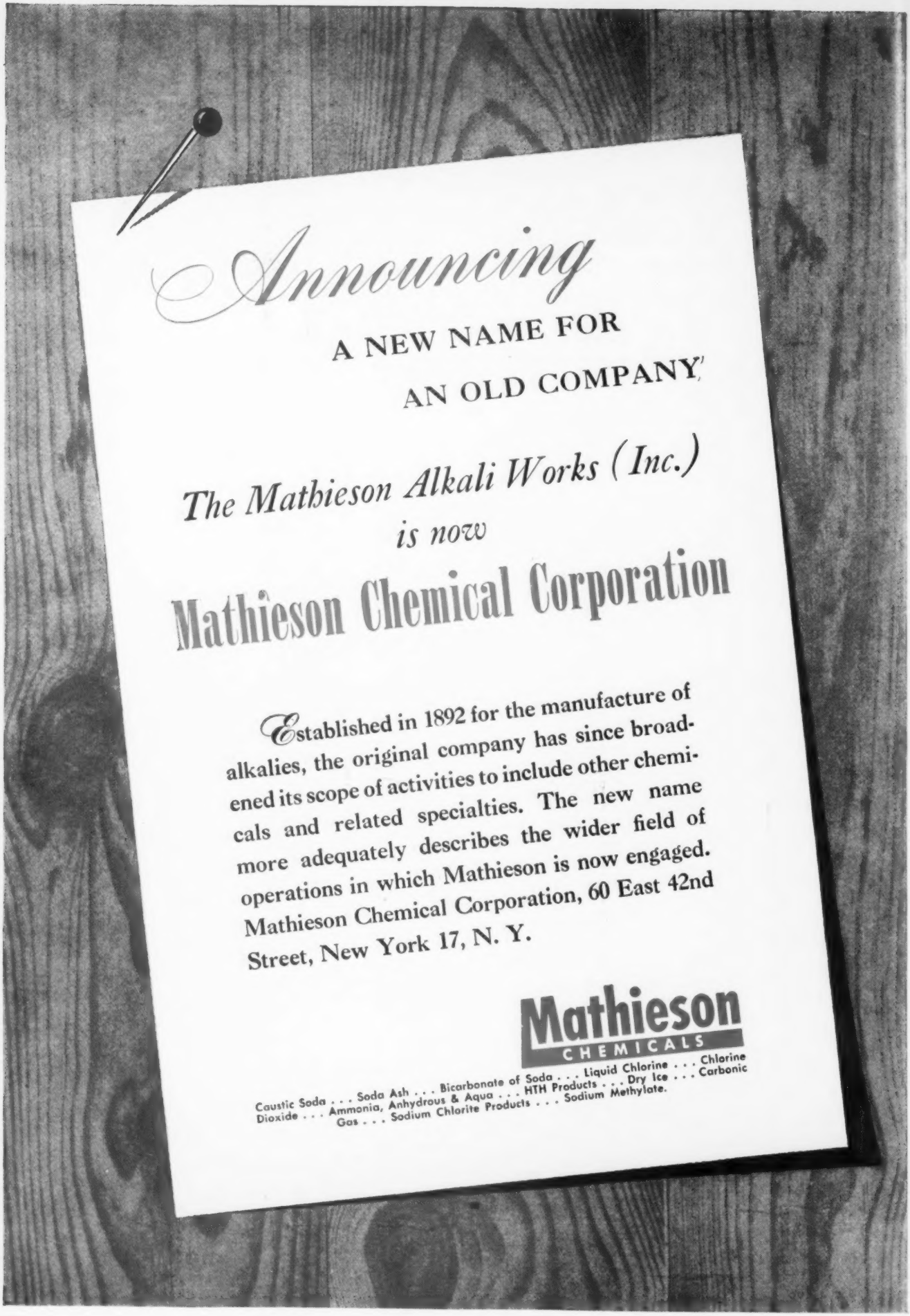
D

Have you equipped your looms with spring crank arms? With this application alone, mills have increased loom speeds by 7 to 20 picks per minute.

- Crank arm adjustment permits accurate setting of lay in relation to transfer motion and interrelated parts. Positive setting is maintained at all times.
- Coil springs absorb shock with resulting smoother loom operation.
- Replaceable bronze bushings and easily accessible grease fittings insure long crank arm life under severe mill conditions.

Replace wood crank arms with spring type crank arms. Derive the benefits of higher speed and more cloth per loom. Modern weave room methods call for up to date parts.

DRAPER CORPORATION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A NEW NAME FOR
AN OLD COMPANY
The Mathieson Alkali Works (Inc.)
is now
Mathieson Chemical Corporation
Established in 1892 for the manufacture of alkalies, the original company has since broadened its scope of activities to include other chemicals and related specialties. The new name more adequately describes the wider field of operations in which Mathieson is now engaged. Mathieson Chemical Corporation, 60 East 42nd Street, New York 17, N. Y.
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Caustic Soda . . . Soda Ash . . . Bicarbonate of Soda . . . Liquid Chlorine . . . Chlorine Dioxide . . . Ammonia, Anhydrous & Aqua . . . HTH Products . . . Dry Ice . . . Carbonic Gas . . . Sodium Chlorite Products . . . Sodium Methylate.

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TEXTILE WORLD

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(Cover photograph courtesy Factory Management and Maintenance)

THE *Long-Range* VIEW

Interim Period

Many of the fine things we set our hearts upon having "after the war" we shall not get for some time, it now appears—but some we shall, and now! Most of us failed to take into consideration the interim period that always occurs between the conception of an idea and its fruition.

That period for many things is now at an end: Witness the many developments appearing in the pages of TEXTILE WORLD, exemplified by the *Textile Equipment* News department of this issue.

Of course, there are still many improvements in the offing for the textile industry; and undoubtedly more will unfold during the next twelve months than have in the last.

European accomplishments are, in a very limited way, now being felt here, as more and more foreign developments come to light.

Considering world demand for textile machinery and the high state of technical achievement in the United States, it has not been felt that foreign equipment can directly affect our textile industry to an appreciable degree. However, many techniques and machinery developments that have come to light recently indicate the distinct possibility that we can uncover items of importance from abroad.

Fortunately, Americans are not complacent. They want to know *what* is of value to them regardless of *who* is responsible for its development. It is with the foregoing thoughts that we search personally (and through our world-wide organization) by visiting European plants, machine builders, and research organizations for anything that will be of benefit to the textile industry.

C. W. Bendigo, editor of TEXTILE WORLD, embarks for European textile study on Pan American Airways Constellation plane, La Guardia Field, March 20.

With virtually all German textile-machinery manufacturers and most German textile technology no longer a world factor, the niche Germany held is being competed for by Switzerland, England, and the United States. Fortunately, the U. S. had the edge over all, although one must acknowledge fine workmanship by the Swiss and effective merchandising by the British. While there is no question of our ability to maintain world leadership in textile technology, we shall not do so by remaining complacent, self-satisfied, and blind to what goes on elsewhere.

For years, there has been a black-out of textile developments from abroad (and a brown-out here). The war and then the aftermath have had a retarding effect which is still being felt. In Britain, for example, despite claimed need for 20,000 looms yearly, only 6,000 will be produced—many of them non-automatic and, in our opinion, obsolescent even as they are built. It is entirely conceivable that another black-out may come; but, before it does, perhaps we can benefit to some degree, at least, from developments that have taken place since end of World War II.

One thing is certain, it is to our industry's advantage to know about all textile improvements that are conceived and to do all possible to reduce that interim period between conception, trial, and widespread adoption. To accelerate the technological advancement of the textile industry is our primary function. It is up to mill executives and operating personnel to keep themselves posted and to adopt those advances which TEXTILE WORLD shall continue to report as fully, interpretively, and accurately as is in our power.

C. W. Bendigo

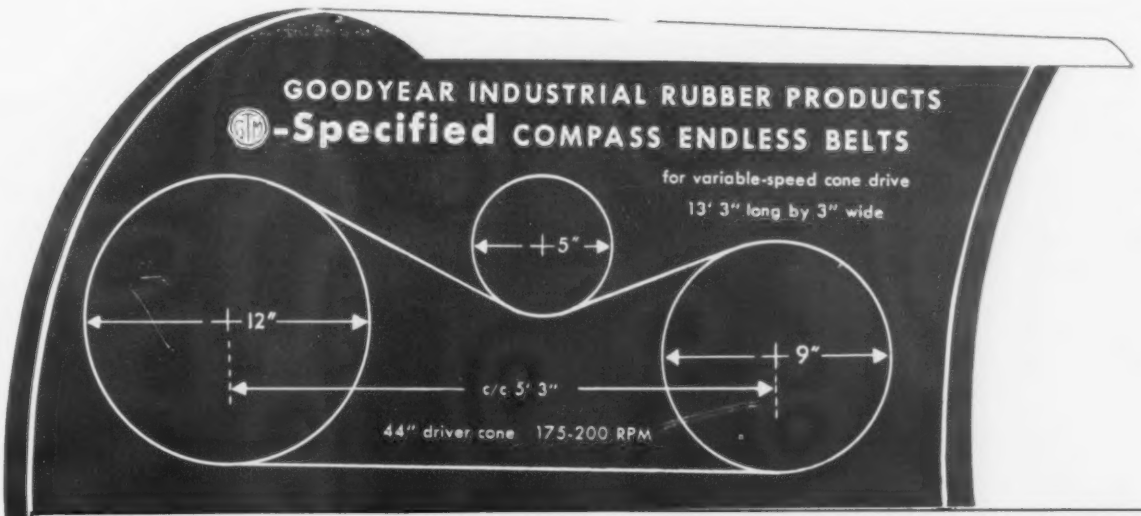
Belt Life *stretched* Belts *didn't!*

Another Goodyear Performance Record

A LARGE southern mill had plenty of belt troubles on their slasher horizontal, variable-speed cone drives. Conventional endless belts stretched hopelessly in a few days; after being cut and fastened, severe idler action tore out fasteners in a short time. With constant repair and shutdowns, belts lasted only six to eight months.

Then upon recommendation of the G.T.M. – Goodyear Technical Man – four Goodyear COMPASS endless belts were installed. In service 24 hours a day, these belts gave more than three years' continuous service without being touched – *five times longer performance with no maintenance!*

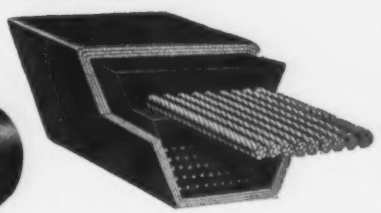
If you've a tough textile drive, see the nearest Goodyear Industrial Rubber Products distributor, or write the G.T.M., Goodyear, Akron 16, Ohio.



GET ACQUAINTED WITH THESE OTHER GOODYEAR RECORD-BREAKERS

THOR BELTING – a superior-quality square-edge belt for high-speed drives involving severe flexing over small pulleys. Combines high shock-load resistance with ability to hold fasteners.

TEXAIR HOSE – a super-flexible hose for cleaning spindles and cards. Light, supple cover won't soften from contact with oil and is tough enough to resist cutting and abrasion – insuring long, economical life.



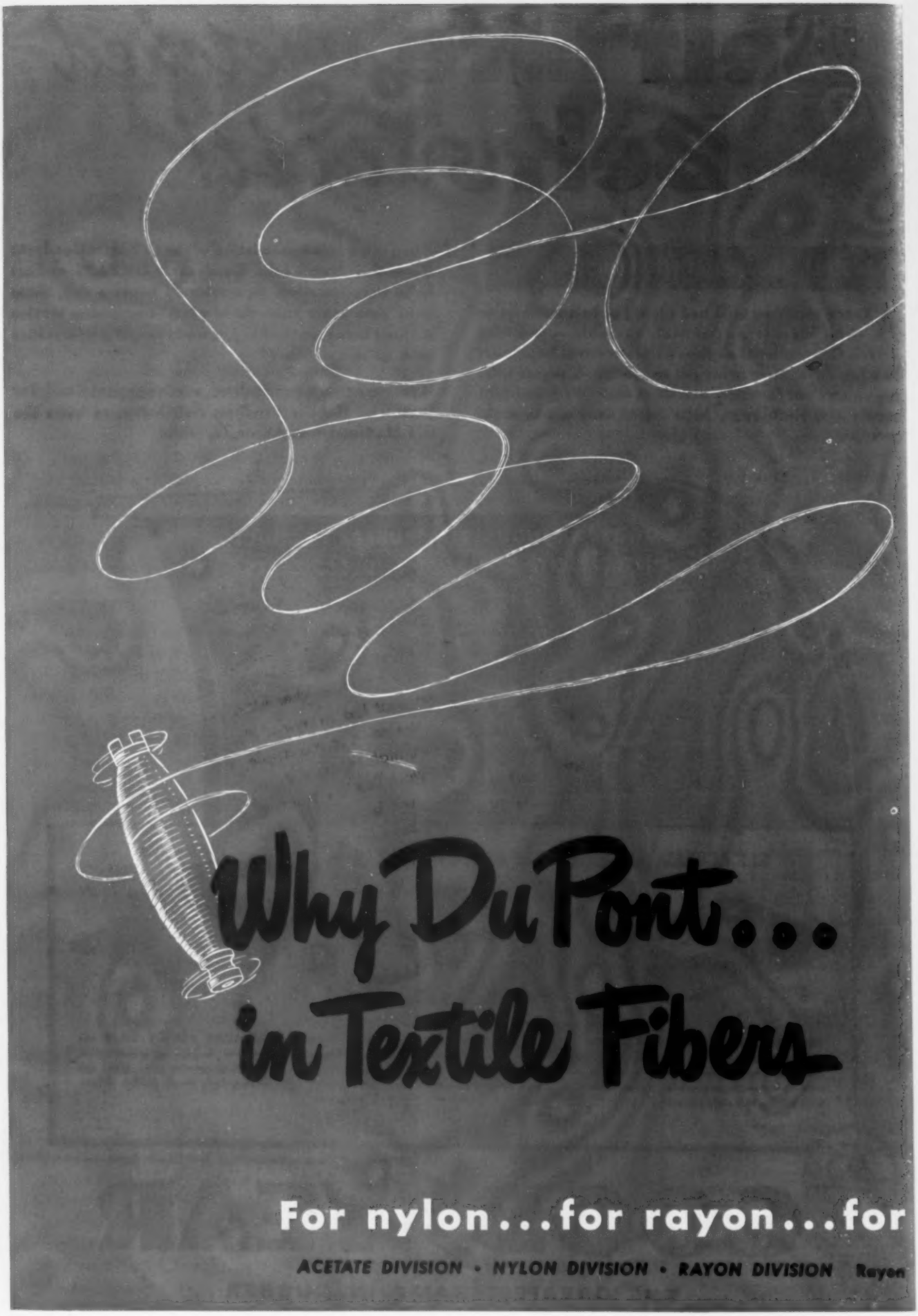
E-C CORD MULTI-V BELTS are uniform in length, cross-section, pull and service life. Ideal for high-speed, small pulley drives.

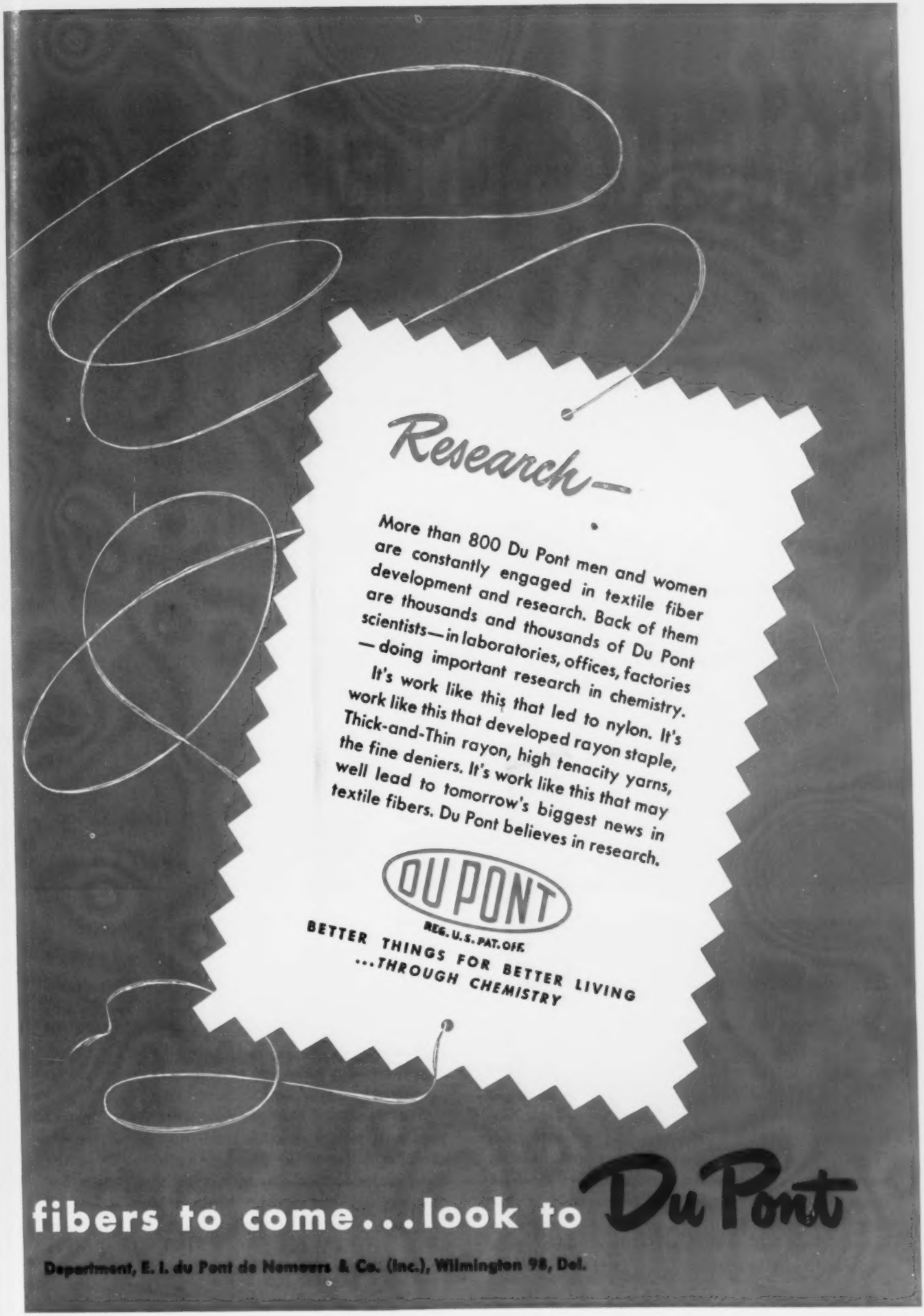
1898 50 GOODYEAR ANNIVERSARY 1948

Compass, E-C Cord, Texair, Thor—T.M.'s The Goodyear Tire & Rubber Company

GOODYEAR

THE GREATEST NAME IN RUBBER


Why DuPont...
in Textile Fibers
For nylon...for rayon...for
ACETATE DIVISION • NYLON DIVISION • RAYON DIVISION
Rayon


Research—
More than 800 Du Pont men and women are constantly engaged in textile fiber development and research. Back of them are thousands and thousands of Du Pont scientists—in laboratories, offices, factories—doing important research in chemistry.
It's work like this that led to nylon. It's work like this that developed rayon staple, Thick-and-Thin rayon, high tenacity yarns, the fine deniers. It's work like this that may well lead to tomorrow's biggest news in textile fibers. Du Pont believes in research.
DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY
fibers to come...look to Du Pont
Department, E. I. du Pont de Nemours & Co. (Inc.), Wilmington 98, Del.

BARRELED SUNLIGHT *SELF CLEANING OUTSIDE WHITE*

...and Company Houses Smile Again!

IT STAYS WHITE, BRIGHT AND RIGHT

Rather than reduce the quality of Outside Barreled Sunlight when first grade raw materials were "tight" we took it off the market. But NOW IT'S BACK — BETTER THAN EVER! With the first brush stroke you'll see that it's even whiter, more brilliant. And it actually becomes whiter and brighter *with time*. "Controlled chalking" removes dirt and dust in weathering . . . keeps the surface always clean in appearance. Moreover, *and most important*, it is that slow "controlled chalking" process that leaves a smooth, even surface that is readily repainted with a minimum of preparation.

Barreled Sunlight Outside White is a multiple-pigment paint, specially formulated for long-lasting protection and rock-bottom maintenance costs. Its flow, hiding power and meld have all been improved. It is the *quality* paint you need for a first-class, long-lasting paint job at an economical cost.

Ask a Barreled Sunlight representative to inspect your mill village or other residential properties. He can offer dollar-saving paint advice in matching the right Barreled Sunlight paints to your needs for exteriors and interiors of company-owned homes . . . in white or color combinations, if desired. Write U. S. GUTTA PERCHA PAINT COMPANY, 20-E Dudley St., Providence, R. I.

IS BACK BETTER THAN EVER

Get the "Inside" Story on How BARRELED SUNLIGHT Ups Worker Efficiency Through Better Light!

Light-meter tests prove beyond question that famous Barreled Sunlight WHITE paint on plant ceilings and walls makes seeing easier hence adds to worker efficiency. After painting with Barreled Sunlight, one large plant reports *30% more light!* Your Barreled Sunlight representative can supply helpful recommendations for painting mill interiors better — and at lower cost.

BARRELED SUNLIGHT *Paints*

In whitest white or clean, clear, pleasing colors, there's a BARRELED SUNLIGHT Paint for every job

a great new loom motor

...designed by GE for the looms you're now using—and those you're planning to buy!

it's built the way a loom likes it!

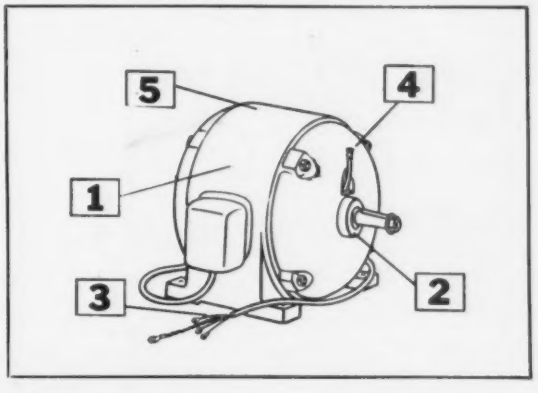
This new G-E loom motor was designed for one application and one only—loom service. After a detailed analysis of the power requirements of looms, G-E engineers developed this new line of motors with each rating "tailored" to meet the specific needs of loom drives. They considered looms operating not only at conventional pickages but at the higher speeds which modern production requires. And they incorporated physical innovations which, along with its efficient performance, make this loom motor a real buy for your money.

G-E textile loom motors are easy to install on existing and new equipment

it's better protected than ever!

In addition to basic Tri-Clad protection against physical damage, electrical breakdown, and operating wear-and-tear, this new loom motor gives you:

1. A rugged, totally enclosed, cast-iron frame which is shorter, takes up less aisle space.
2. Larger diameter, wool packed, steel-backed bronze bearing linings for greater capacity and longer life.
3. Multi-conductor jacketed cable with ground lead (no conduit) to meet insurance recommendations.
4. A pinion-end bearing that's easier to lubricate.
5. All ratings with a single diameter frame to make it easy to change ratings as production demands vary.



GENERAL ELECTRIC

TOTALLY ENCLOSED

TRI/CLAD

LOOM MOTORS

Lint-free and cast-iron!

General Electric Company, Section A661-31
Apparatus Department, Schenectady 5, N. Y.

Please send without obligation a copy of your Bulletin GEA-5011 which describes the new G-E totally-enclosed 40° C rise loom motor.

Name_____

Address_____

City_____ State_____

75%-90% ANNUAL RETURN

on your INVESTMENT in the

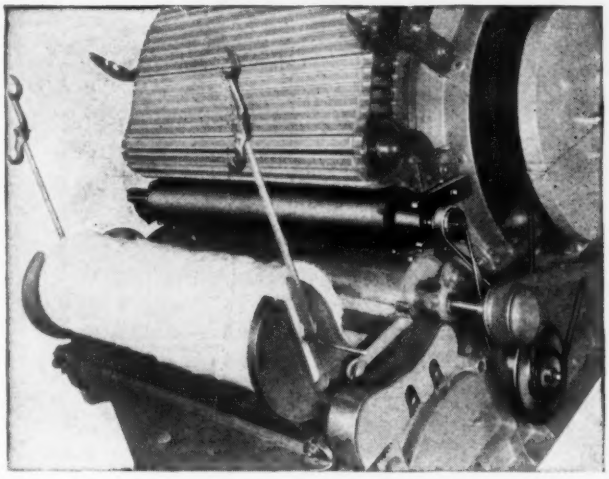
SACO-LOWELL

Continuous Card Stripper

Revealing statistics, available through

Waste Reports
Production Records
Cost account . . . and
Balance Sheet

all show that the Saco-Lowell Continuous Stripper earns from 75% to 90% *annually* on a two-shift 80-hour basis!



The Saco-Lowell Continuous Stripper can be applied to practically all Revolving Flat Cards — with equally good results.

Here are a few of its PRODUCTION ADVANTAGES

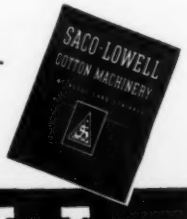
- It is easy to install
- Operates without added cost
- Recovers up to 2% additional fibre
- Reduces waste, nep count and lost production
- It makes a cleaner and more uniform sliver

Please note:

The Continuous Stripper yields the same important results, even though your card room may be equipped with vacuum or other type strippers, since those other installations do not reduce waste, nep count, or lost production — nor do they prevent loading of the cylinder with impacted waste.

Engineer available: Would you like to have one of our engineers discuss this subject with you? A letter or telephone call to our nearest Sales Office will bring prompt response — without the slightest obligation to you, of course.

A special catalog giving technical and engineering data will be sent promptly on request . . . write our nearest office.



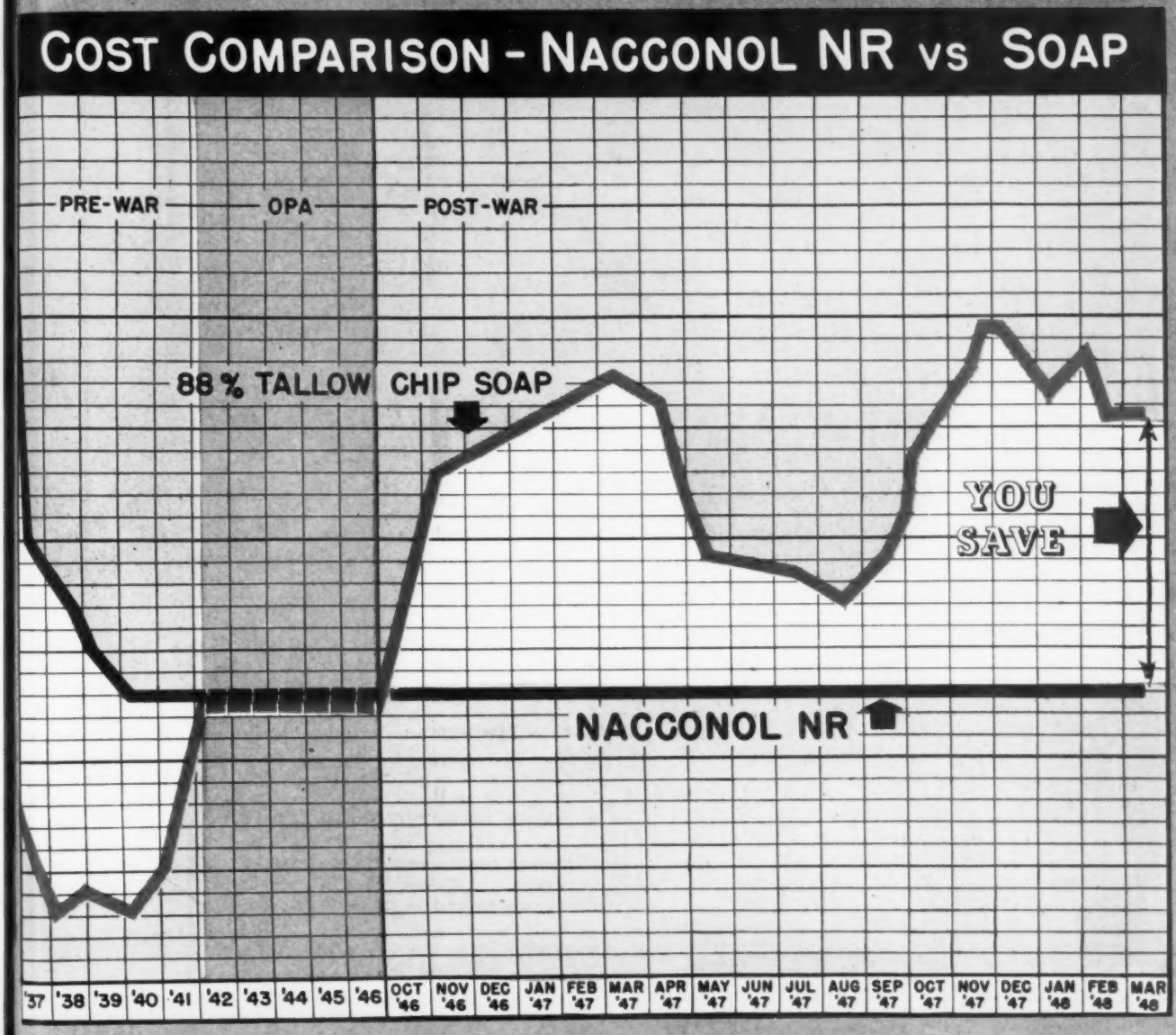
SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

Shops at BIDDEFORD, MAINE

SALES OFFICES: CHARLOTTE • GREENVILLE • ATLANTA

Mill Executives: Save on Soap Costs by switching to NACCONOL* NR


COST COMPARISON - NACCONOL NR vs SOAP
COST PER POUND
PRE-WAR
OPA
POST-WAR
88% TALLOW CHIP SOAP
YOU SAVE
NACCONOL NR
30¢
20¢
13¢
10¢
0
'37 '38 '39 '40 '41 '42 '43 '44 '45 '46 OCT '46 NOV '46 DEC '46 JAN '47 FEB '47 MAR '47 APR '47 MAY '47 JUN '47 JUL '47 AUG '47 SEP '47 OCT '47 NOV '47 DEC '47 JAN '48 FEB '48 MAR '48

*Reg. U. S. Pat. Off.

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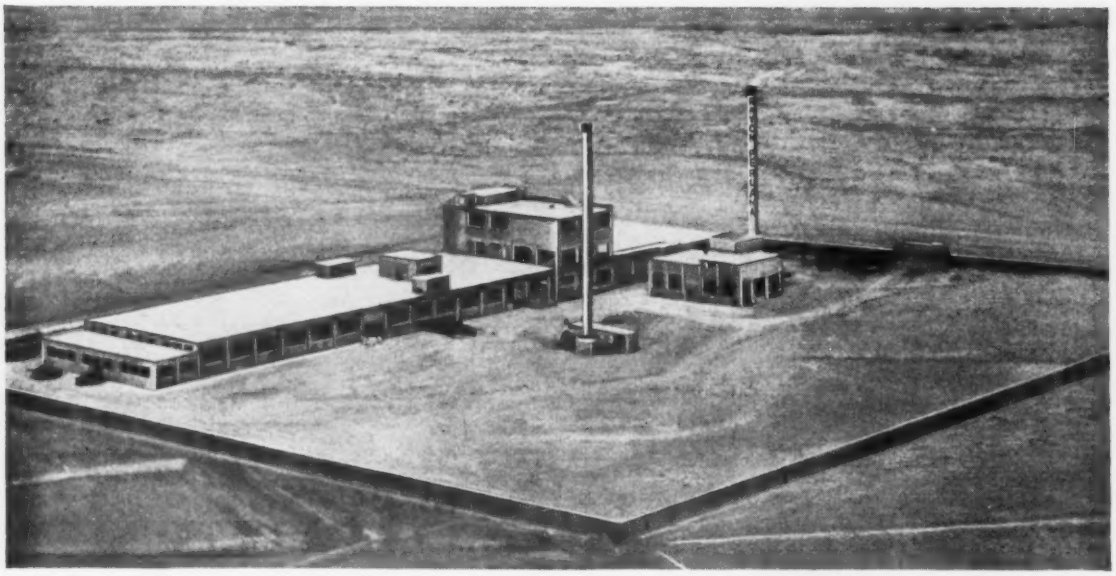
From this new South American plant

Number 11 of a series of Kohorn projects

RAYON USERS ARE RECEIVING . . .



. . . MORE FILAMENT RAYON YARN . . .

Weavers, knitters and spinners organized this new rayon-producing plant to secure for themselves, through a vertical supply structure, a dependable source of rayon. The plant's present equipment has a weekly capacity of 30,000 lbs. of filament rayon yarn. A rayon staple fiber department of 75,000 lbs. weekly output is now being added. The contractor for the engineering, equipment and technical management of the plant is Oscar Kohorn & Co., Ltd.

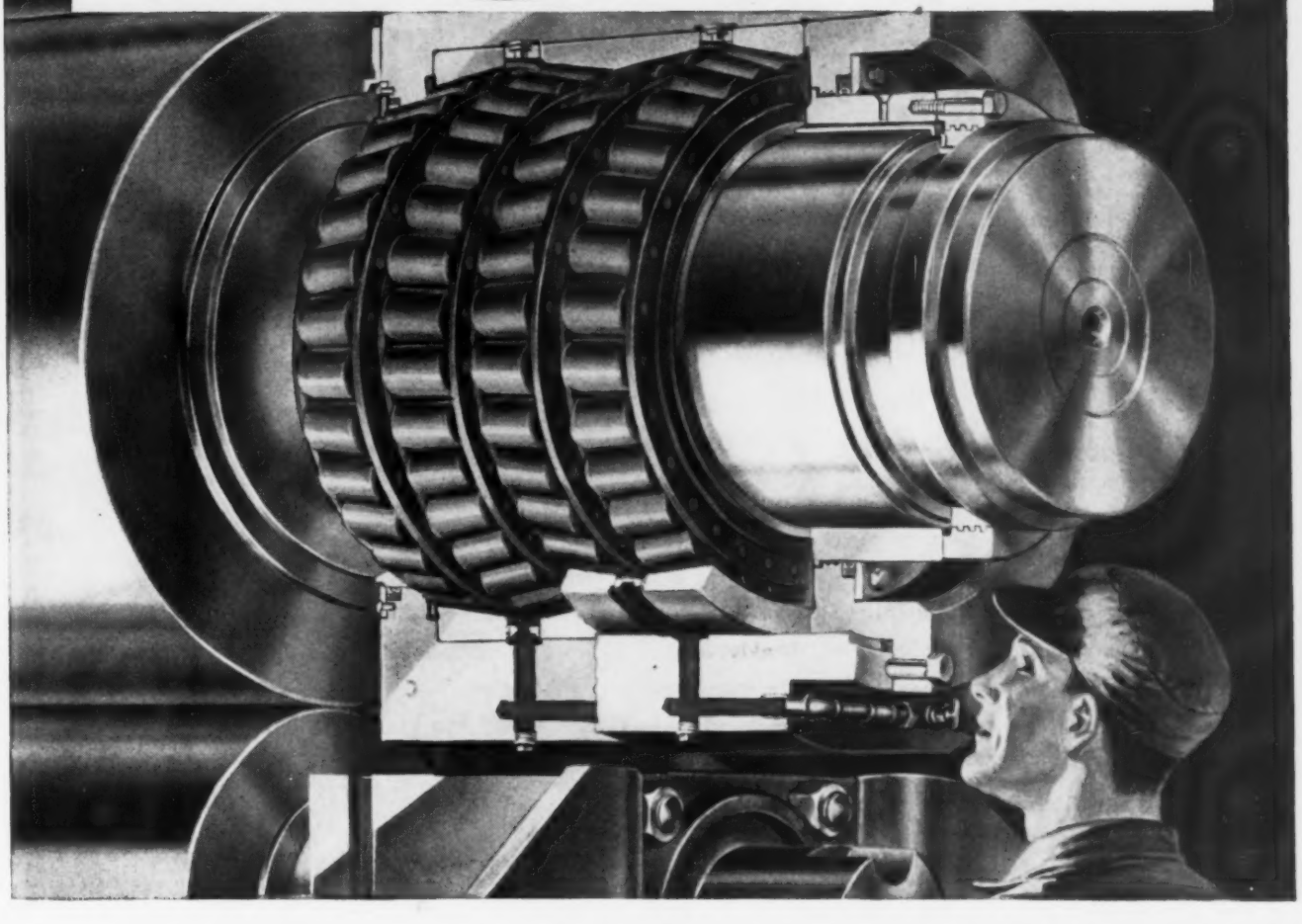
United States converters, weavers, knitters and spinners who similarly wish to obtain more filament rayon and rayon staple fiber are urged to consult us now in confidence.

Pioneers of the Rayon Industry

OSCAR KOHORN & CO., LTD.

EXECUTIVE OFFICES **501 FIFTH AVENUE, NEW YORK 17, N.Y.**

Are You Starving a Golden Goose . . . *to Save Chicken Feed?*



Vital Machines Produce More . . . with the Right Oils

Your production machines are really geese that lay golden eggs. That's why you can't afford to take chances on anything that might slow up or stop their output.

The wrong oil can cause a burned out bearing or gear failure or a scored cylinder. The result—a dead "goose," lost time, big repair bills. Yet the cost of the right oil to prevent this is chicken feed, compared to the benefits.

Socony-Vacuum's Correct Lubrication program will assure you of the right lubricant for every bearing in your plant—and every gear and cylinder, too. Get this program now and keep your golden geese on the job.

Socony-Vacuum

Correct Lubrication

SOCONY-VACUUM

GARGOYLE Lubricants

SOCONY-VACUUM OIL CO., INC., and Affiliates:
MAGNOLIA PETROLEUM CO., GENERAL PETROLEUM CORP.

LURIA INDUSTRIAL BUILDINGS

NOW IN PRODUCTION

Luria offers a complete line of Standard Buildings specifically planned to be adaptable for all industrial requirements. Several basic types in a wide range of sizes can be used individually or in a variety of combinations.

Luria buildings are permanent structures fabricated from heavy structural steel and designed to comply with the latest building codes. A choice in the use of collateral materials and the location and type of doors and windows increases the utility and allows complete freedom in architectural treatment.

ADAPTATIONS OF STANDARD UNITS

BASIC UNIT WIDTHS 40′ TO 100′ CLEAR SPAN
LENGTH ADJUSTABLE IN INCREMENTS OF 20′
CLEARANCE AT EAVES 12′ TO 20′

LURIA ENGINEERING CORPORATION

500 Fifth Avenue, New York 18, N.Y. — 1734 Candler Bldg., Atlanta 3, Georgia — Fidelity Philadelphia Trust Bldg., Philadelphia 9, Pa. — Chamber of Commerce Bldg., Boston 10, Mass. — First National Bank Bldg., Chicago 3, Illinois

SANDOZ PRESENTS

the color achievement of the month

Twilit Tricot

...BY BEAUNIT

Over the soft beauty of its tricot jersey, Beaunit Mills has laid two of the colors of evening to match the boudoir mood.

With dyes by Sandoz, Beaunit benefits from colors that attract the purchaser and compliment the wearer. And, technically, Sandoz colors fulfill Beaunit's severest requirements for efficiency in processing and fastness to washing and wear.

An enviable customer list gives evidence of Sandoz success in satisfying high standards for style-rightness and service.

Among recent Sandoz developments in finishes is

CERANINE HC

a cationic agent for softening any high quality rayon or cotton tricot material. It has the desirable property of leaving whites and pale shades absolutely clear without any staining . . . and produces a full, soft hand of excellent draping qualities.

For acid, chrome or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you see in these Sandoz advertisements.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N.Y.

Application laboratories and stocks at Boston, Philadelphia, Charlotte, Los Angeles, Toronto. • Other branches at Providence, Paterson, Chicago.

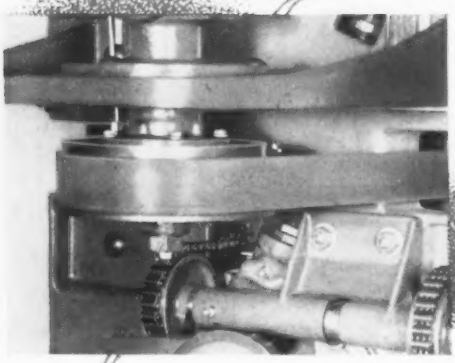
DETROIT PUBLIC LIBRARY

SANDOZ *thinks ahead with textiles*

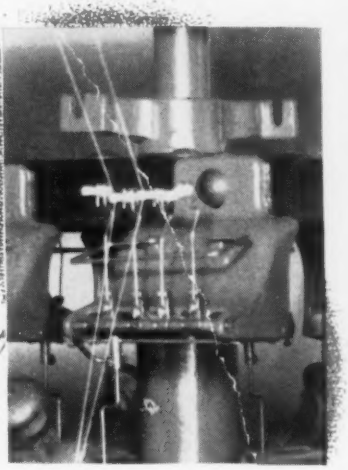
SANDOZ

Looks Well ON ANY SHAPE ...tall, short or stout

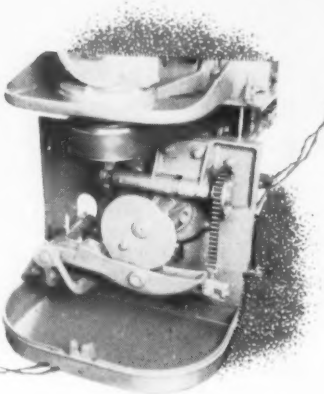
Atwood Model 10 Ring Twister gives you a choice of three package shapes — tapered top, double-tapered or straight wind. On *any* shape, twist is uniform, winding smooth, yarn clean -- because of these quality *controls*.



One endless, lapless Atwood drive belt serves all 100 spindles, delivering equal power to each spindle. Constant spindle speed means accurate twist from spindle to spindle.



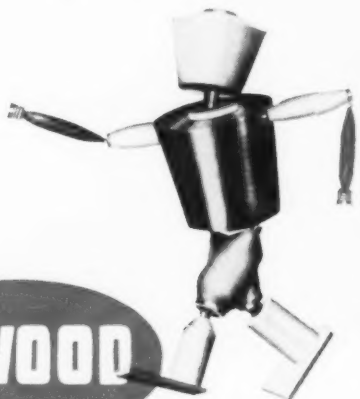
Automatic stop motion stops *individual* spindle and feed roll simultaneously, so knots can be tied in single ends. This eliminates roller laps and single ends in the package.



The accelerated cam used in the taper top builder motion results in each layer of yarn being constantly covered, so that there is no soilage and the finished package is smooth and clean.

The Ring Twister with Automatic Stop Motion for Every End and Ply

Write Us for Latest Bulletin



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ATWOOD DIVISION

ATWOOD

Reg. U.S. Pat. Off.

Providence • Boston • Philadelphia • Utica • Charlotte • Atlanta • Chicago • Los Angeles • Montreal • Hamilton

Manchester, England • Paris, France • Basle, Switzerland • Agents in every principal textile center in the world.

YOU can profitably use one or more of these ROTARY IMPACT TOOLS

NO KICK
NO TWIST
EVEN ON THE TOUGHEST JOBS

AMAZING all-purpose ELECTRIC TOOL will

- Drill up to 1/4" dia.
- Ream up to 1/2" dia.
- Tap up to 1/2" dia.
- Run Nuts up to 3/8" dia.
- Drive Screws up to 3/8" dia.
- Hole Saw up to 1 1/2" dia.
- Bore Wood up to 29/32" dia.
- Drive Studs up to 3/8" dia.
- Drill Masonry up to 3/8" dia.
- Extract Broken Studs up to 3/8" dia.
- Wire Brush up to 3/8" dia. shanks.

(Uses Standard Attachments)
(110 V or 220 V Models available)

Only one Ingersoll-Rand *all purpose* Impact Tool is required to perform all of the operations listed. The ratings are very conservative and many jobs in excess are being easily handled by the powerful "rotary impacts".

What other electric tool will permit you to do these tough operations without any kick or twist to the operator? Plug it in any wall socket—it is reversible with full power in either direction—it weighs only 6½ pounds, but what an amazing tool for getting all those jobs done!

Ideal for installation crews—one manufacturer has equipped his installation crews with IMPACT Tools and attachments. Now, in place of 3 or 4 electric tools they carry only one and also save from 10 to 20 percent of the installation time.

Don't hesitate, call your nearest distributor now for a demonstration of this labor saving—time saving *all purpose* IMPACT Tool. They're available for immediate delivery.

Ingersoll-Rand

11 BROADWAY, NEW YORK 4, N. Y. 194-18

What Other Production Machine Can Match This 20-Year Record of Steadily Increased Output Under Such Strict Limitations?

Consider first the three channels which guide all research in development of C&K Looms:

1. WEAVING MATERIALS: Natural wool and cotton fibres . . . synthetics . . . or blends . . . each with peculiarities which must be heeded in detail by the loom designer.

2. WEAVING MACHINERY: The end-objectives are few . . . higher speeds . . . greater efficiency (fewer loom stops) . . . better quality (fewer seconds) . . . larger beams, bobbins, and rolls of cloth.

3. MACHINE DESIGN: The unchangeable operation of efficiently passing filling threads through the warp imposes strict limitations on the types and capacities of interrelated mechanisms used in building C&K Looms.

ULTIMATE OBJECTIVE: To give any mill the most efficient type of loom for its job — at initial and upkeep costs which will yield to that mill the highest profit per loom over the longest period of time.

MEASURE OF SUCCESS: In the last 20 years, one of the most widely used types of C&K Looms has increased its output per man-hour by 61%.

As of now, it certainly seems an open question whether any other type of machine — developed under comparably strict design-limits — can match this 20-year record of C&K Looms.

Meanwhile C&K's engineering research laboratories keep everlastingly at it, to advance loom-performance beyond present levels.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.

PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA. C&K CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

Eliminates guesswork for textile men . . .

The *Fibrograph* TRADE MARK

a new instrument for measuring cotton fiber length *electronically*

● Now, for the first time, cotton fiber analysis can be made on a scientific basis. The Fibrograph, pictured above, makes possible this new technological advance in the textile world.

This optical precision instrument is new in design and operating principle. Employing phototubes, it scans samples of parallel cotton fibers—and simultaneously traces a special length-frequency curve. From the resulting curve's geometrical properties it is possible to determine quickly various average length intervals, variance, and co-efficient of variation. Human error and guesswork are eliminated.

The Fibrograph is rapidly becoming the standard means for fiber length analysis. Its automatic grading method is especially suited for textile mills . . . for raisers, processors and brokers of cotton . . . for research laboratories.

A dependable, precision instrument—compact, ruggedly built, easy to use. Supplied with complete accessories. For complete information, write for Bulletin JT-840.

Temperature Controls • Bellows Devices • Bellows Assemblies

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DIVISION

FIRST WITH BELLOWS

ROBERTSHAW-FULTON CONTROLS CO., KNOXVILLE 4, TENN.

Canadian Representatives, Darling Brothers, Montreal

HYCAR AMERICAN RUBBER LATEX...

a new material for impregnating and coating fabrics, fibres, and threads

HYCAR latex, when used as a coating or impregnant for even inexpensive materials, imparts many desirable properties not easily obtained with other coatings and impregnants.

For example, high resistance to oils, chemicals, abrasion, and flexing—to name a few—are added in very desirable degrees by HYCAR latex, used as an impregnant or a coating. And HYCAR-impregnated materials may then be coated with any one of a number of other materials to impart additional properties.

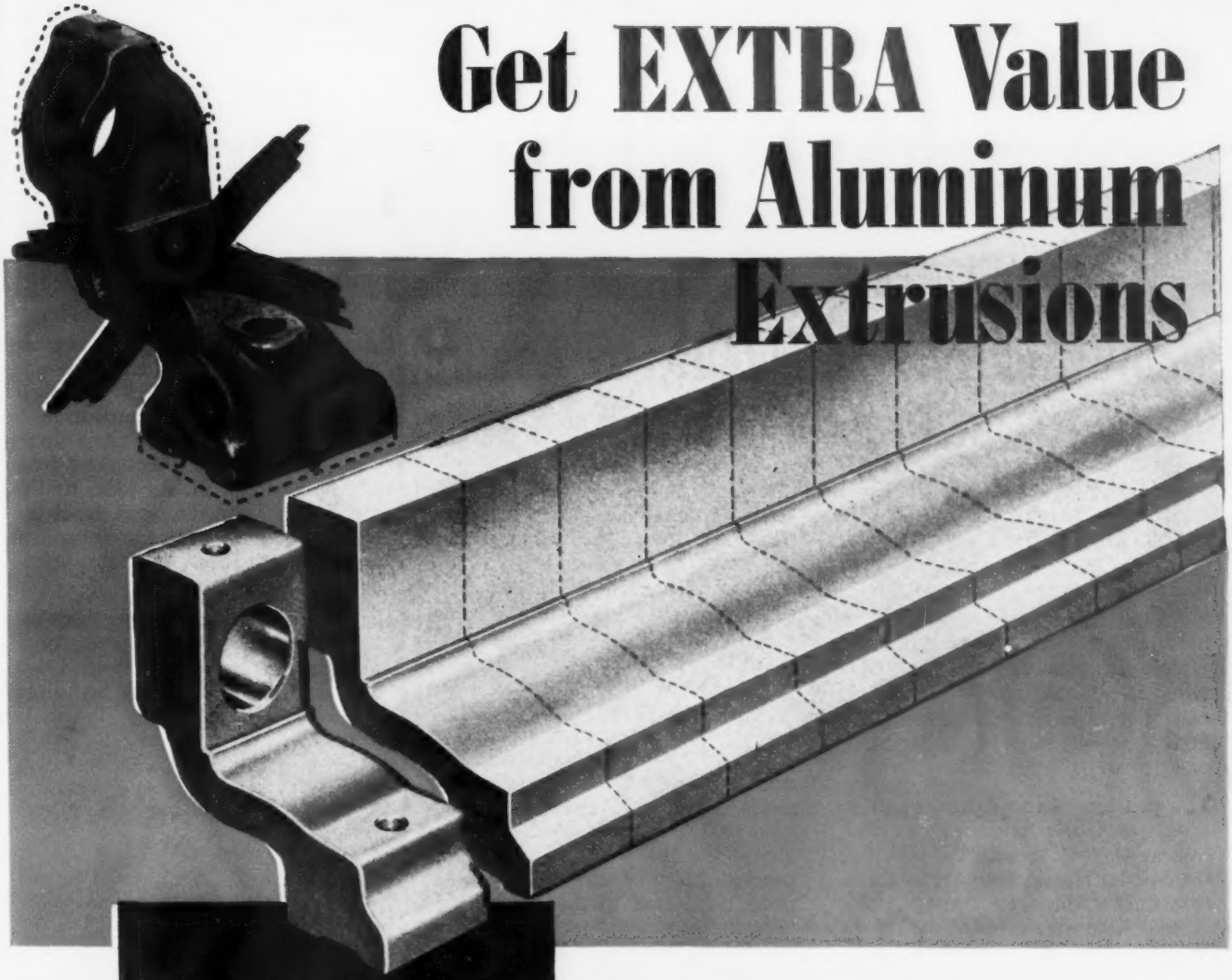
All of this can be done, safely and simply, with HYCAR latex, because it's an inherently easy and safe material to handle. No vulcanization is required. Normal drying times are used. No explosive solvents need be handled. Nor is there any need for cumbersome and costly solvent recovery systems.

We would be glad to work with you on any problems relating to the use of HYCAR American rubber latex. For more information write Dept. HL-3, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

Hycar
Reg. U.S. Pat. Off.
American Rubber

B. F. Goodrich Chemical Company
A DIVISION OF THE B. F. GOODRICH COMPANY

Get EXTRA Value from Aluminum Extrusions



The H & B American Machine Co. utilizes aluminum extrusions to cut costs, reduce weight and improve product

TOP and bottom snugs (160 per frame) on speeders manufactured by the H & B American Machine Company were formerly made of cast iron. Today they are extruded from Reynolds Aluminum.

Examine the illustration above and the reasons for this progressive step are apparent. Pictured are one of the cast iron snugs and its counterpart extruded from aluminum. The aluminum snug is cut from a long, easy-to-handle shape, extruded from a special die to exactly the desired cross-section. Extrusion tool costs are low.

The machining and spot facing operations indicated on the cast iron part are eliminated on the aluminum extrusion, thus saving metal cost, machining time and scrap losses.

Weight reduction by nearly two-thirds results in smoother machine operation; shipping costs are reduced. Because the aluminum shapes are made of tough, heat treated alloy, there is no breakage under rough handling. The aluminum parts are rustproof and require no painting.

That's how even small parts extruded from Reynolds Aluminum can return a big saving. A Reynolds textile engineer will be glad to show you how to get extra value from versatile aluminum. Write our nearest field service office, or Industrial Machinery Division, Reynolds Metals Company, 310 Hanna Building, Cleveland 15, Ohio.

REYNOLDS METALS COMPANY, Aluminum Division, Louisville 1, Kentucky

IF YOU SEE RUST YOU KNOW IT'S NOT ALUMINUM

REYNOLDS METALS

REYNOLDS Lifetime ALUMINUM

REYNOLDS' PIONEERING MADE ALUMINUM COMPETITIVE . . . TAKE ADVANTAGE OF IT!

TEXTILE MACHINERY and

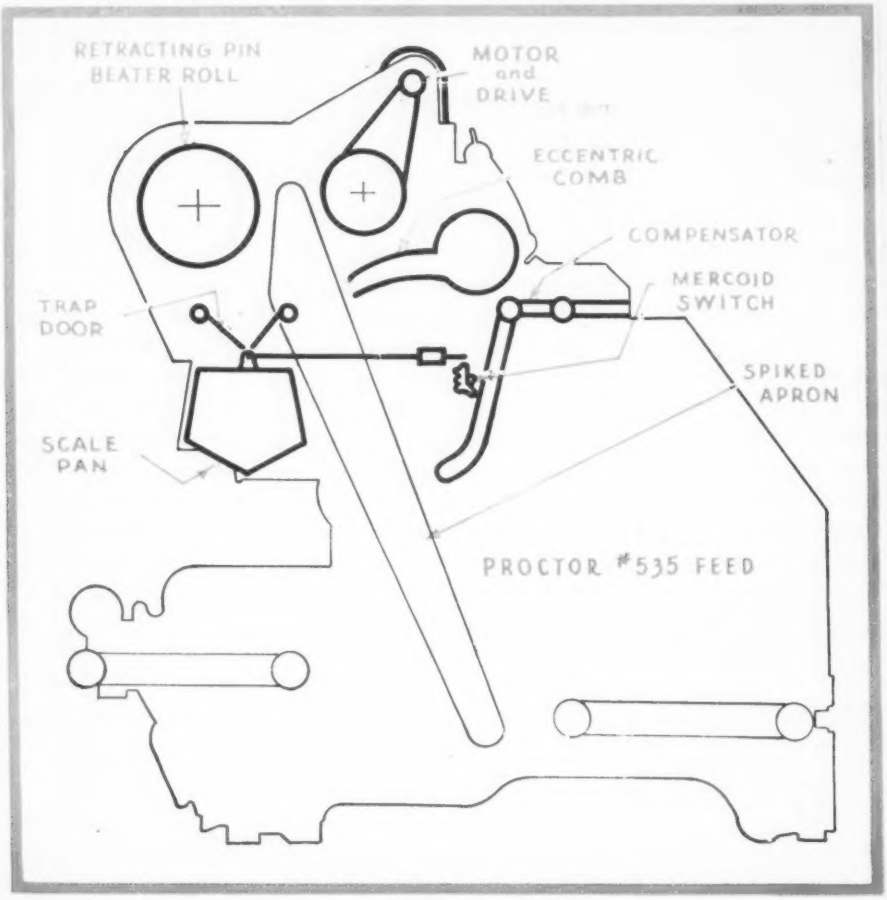
PUBLISHED BI-MONTHLY FOR TEXTILE MILL EXECUTIVES AND OPERATING PERSONNEL BY PROCTOR & SCHWARTZ, INC.

• MAY • 1948 •

Many Features Combine to Assure Accuracy of Proctor Weighing Feeds

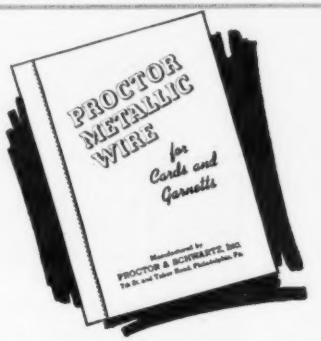
To achieve the maximum efficiency in accurate weighing feeds, it is essential that stock not only be weighed accurately—but that there be an even distribution of stock across the entire width of the feed. The accuracy and efficiency which is possible with Proctor weighing feeds and which is an established fact with textile men, is the result of several features of design.

The pattern of the apron contributes materially to an even distribution of stock across the width of the apron. The compensator which is mainly a finger rack keeps stock adhering to the apron in an even amount and prevents bunching. This is followed by the eccentric comb which serves to even off the amount of stock on the apron as it nears the point where stock will be delivered to the weighing part of the feed. A beater roll, with retracting pins flicks the stock from the apron into the extremely delicately balanced scale pan. Between the scale pan and the beater roll, there is a trap door mechanism, controlled by a mercoid switch and a solenoid, which closes the very second that the predetermined amount of stock has been deposited in the scale pan.



At the instant the trap doors close—the entire mechanism of the feed ceases—preventing any possibility of an undue accumulation of material between the trap doors and the point of discharge from the spiked apron. As soon as the stock has been dropped from the scale pan the entire mechanism begins operation and the cycle starts over.

For complete information on the operation of Proctor weighing feeds and the application of these feeds to your individual stock handling problem write today.



FOLDER ON TYPES OF METALLIC WIRE FOR CARDS AND GARNETTS

A four-page folder depicting the various types of Proctor metallic wire for cards and garnetts is available upon request.

Cards and garnetts equipped with Proctor metallic wire are chalking up excellent production records, which account for the strong trend toward this type of equipment.

This folder provides a ready reference on the type of wire most used. Write for your copy today.

2 SHOPS HANDLE W. COAST RECLOTHING

In addition to the 4 reclothing shops throughout the rest of the country, Proctor & Schwartz have a special arrangement with National Automotive Fibers, Inc. to do reclothing work on the West Coast. Two shops—one in Oakland and one in Los Angeles are prepared to give excellent reclothing service to Proctor customers west of the Rockies. It represents a time and money saving arrangement for this very necessary work.

DRYING EQUIPMENT *News*

Continuous Extracting Unit Performance Cited by Users

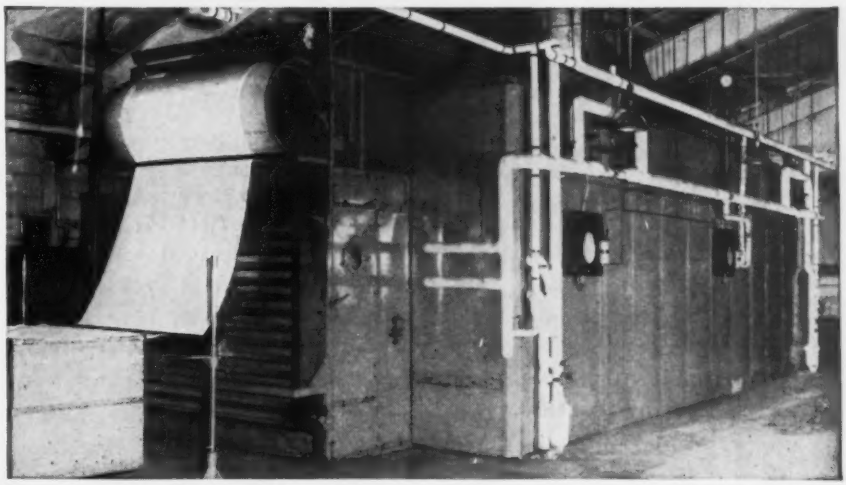
Many users of Proctor continuous extracting units for raw stock have found that this equipment, which does not represent a small initial investment, is none-the-less the most efficient method they have ever employed for removal of excess moisture from stock.

An automatic feed delivers a uniform amount of stock to the squeeze rolls. A vibrating plate, between the feed and the squeeze rolls, feeds a layer of wet stock into the nip of the rolls in such a manner as to prevent droppage of wet stock or bunching of the material as it goes through the rolls.

Users report better opening of matted stock with the result that damp spots in the dried stock are eliminated. Time losses are reduced to virtually nothing. Production is constant and high. Operating costs are kept to a minimum.

Details on this modern extracting system are available, if you write, giving as much information as possible about your requirements.

Refinements in Latest Proctor Loop Dryers Make Possible Improved Performance



The versatile Proctor Loop Dryer now incorporates several refinements in design that make possible a performance that is improved over older types of the same machine.

Girts are now covered with a treated covering that prevents cloth slipping and reduces the danger of "stick marks" in the finished goods. The girts are designed to revolve at given intervals, so that no part of the material is in contact with any part of the girts for any appreciable time.

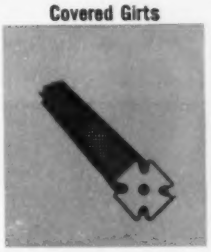
To aid in forming smooth loops in certain classes of goods, these dryers are equipped with a perfected air looper. A carefully timed jet of air is forced down into the loop as it begins to form, thus assisting in forming better loops even in "difficult" material.

Air circulation may be regulated by means of adjustable shutters. An exterior adjustment permits the operator to determine the exact amount of air circulation taking place inside the machine.

A strengthened, stamped mesh floor makes it possible to move about inside of the machine when necessary. For catching lint the machine is equipped with lint screens.

With all of these improvements in design the loop dryer is applicable to a wide variety of goods where finish is applied—but still is not recommended for all types. Individual requirements can alone determine when the dryer meets the finisher's needs. Write for details.

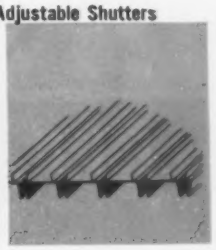
Covered Girts



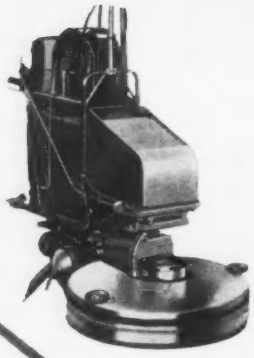
Perfected Air Looper

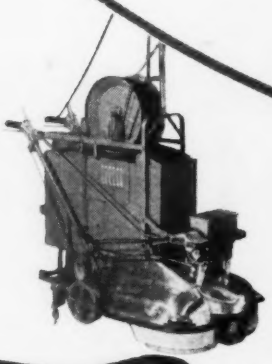
Improved Floor

Adjustable Shutters

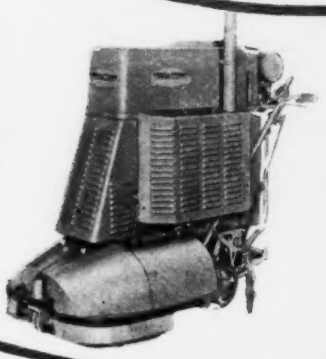


Proctor & Schwartz Inc. • 710 Tabor Road • *Philadelphia 20, Pa.*





Everything FINNELL for Floor Care

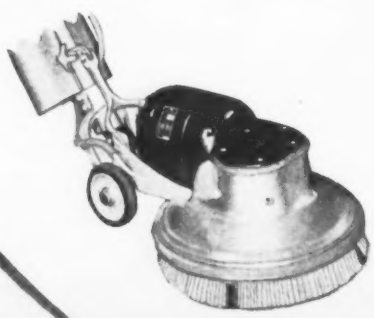


Have You AN UNUSUAL FLOOR-MAINTENANCE PROBLEM?

If so, it will pay you to look to *Finnell* for solution. *Finnell* makes equipment for every type of floor care . . . for all floors . . . all areas. Whether your problem is a hard-to-clean oily floor, or a congested floor, or perhaps a large-area floor for which maintenance is too costly under present methods, there's a *Finnell* that affords the labor-saving solution.

The complete *Finnell* line includes *Combination Machines* that apply the cleanser, scrub, rinse, and pick up . . . *Portable Machines* for wet scrubbing, dry scrubbing, dry cleaning, waxing, and polishing . . . *Mop Trucks* . . . *Vacuum Cleaners* for wet and dry pickup . . . *Cleansers* specially developed for the greater speed of mechanical scrubbing . . . *Sealers* and *Waxes* . . . *Steel-Wool Pads* and other accessories.

For free floor survey, consultation, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 1905 East St., Elkhart, Ind. Canadian Office: Ottawa, Ont.



FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

Dust rides this Cooling Slipstream

OUTSIDE and AWAY

COLOR STREAMERS trace the fan-driven airstream in this action photo. See how it draws out heat from the radiating fins that provide over 150% more cooling surface—without trapping dust and dirt. Even in a virtual dust bowl of flour, cement, or sand, the Sealedpower ventilating system provides no place, no way for dust and dirt to choke and clog. Only Sealedpower Motors offer this *outside* fin construction.

DOWNTIME IS DESIGNED OUT . . . OF C-W SEALEDPOWER MOTORS

THIS EXCLUSIVE DESIGN gives you years and years of cool, clean operation on the dirtiest jobs without time out to clean out dirt-and-dust-traps common to other totally enclosed motors. Even airborne lint that packs and clogs is no problem. It can be cleared from the air grille of the fan-cowl with a whisk of a brush, while the motor is running.

FRAME IS RUGGED CAST IRON to resist the effects of moisture and corrosive conditions like those in textile finishing and chemical plants. There is no steel to rust.

AVAILABLE IN NEW RATINGS . . . 3 to 40 hp at 1800 rpm. Write for Bulletin SL-300-2 giving full details of this unique Crocker-Wheeler Sealedpower Motor. Also, get complete descriptive data on the general C-W line of AC and DC motors and generators, and flexible couplings.

CROCKER WHEELER

ELECTRIC MANUFACTURING COMPANY, AMPERE 3, N. J.

A Division of The Joshua Hendy Corporation

Branch Offices: Boston, Chicago, Cincinnati, Cleveland, Los Angeles, New York, Philadelphia
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QUALITY MOTORS AND GENERATORS SINCE 1888

THROUGHOUT YOUR MILL...AT EVERY

Output and Profits this Link

These advantages have established Texrope Drives in the textile industry:

NO SLIP, VIBRATION OR NOISE

Texrope V-belt drives have the strength to transmit heavy power loads without loss—the resiliency to absorb shock and vibration. Allis-Chalmers originated the multiple V-belt drive 25 years ago, expressly for textile mill application. That's how it got its name—*Texrope*. Since then it has become the accepted drive for many in the industry.

CLEAN, FREE OF GREASE AND OIL

Texrope V-belts require no lubrication or dressing. There is no flying oil or grease to soil products or create fire hazards. Today's improved *Texrope Super-7* V-belts offer an efficient combination of great strength, durability, and uniformity.

SPEED QUICKLY CHANGED

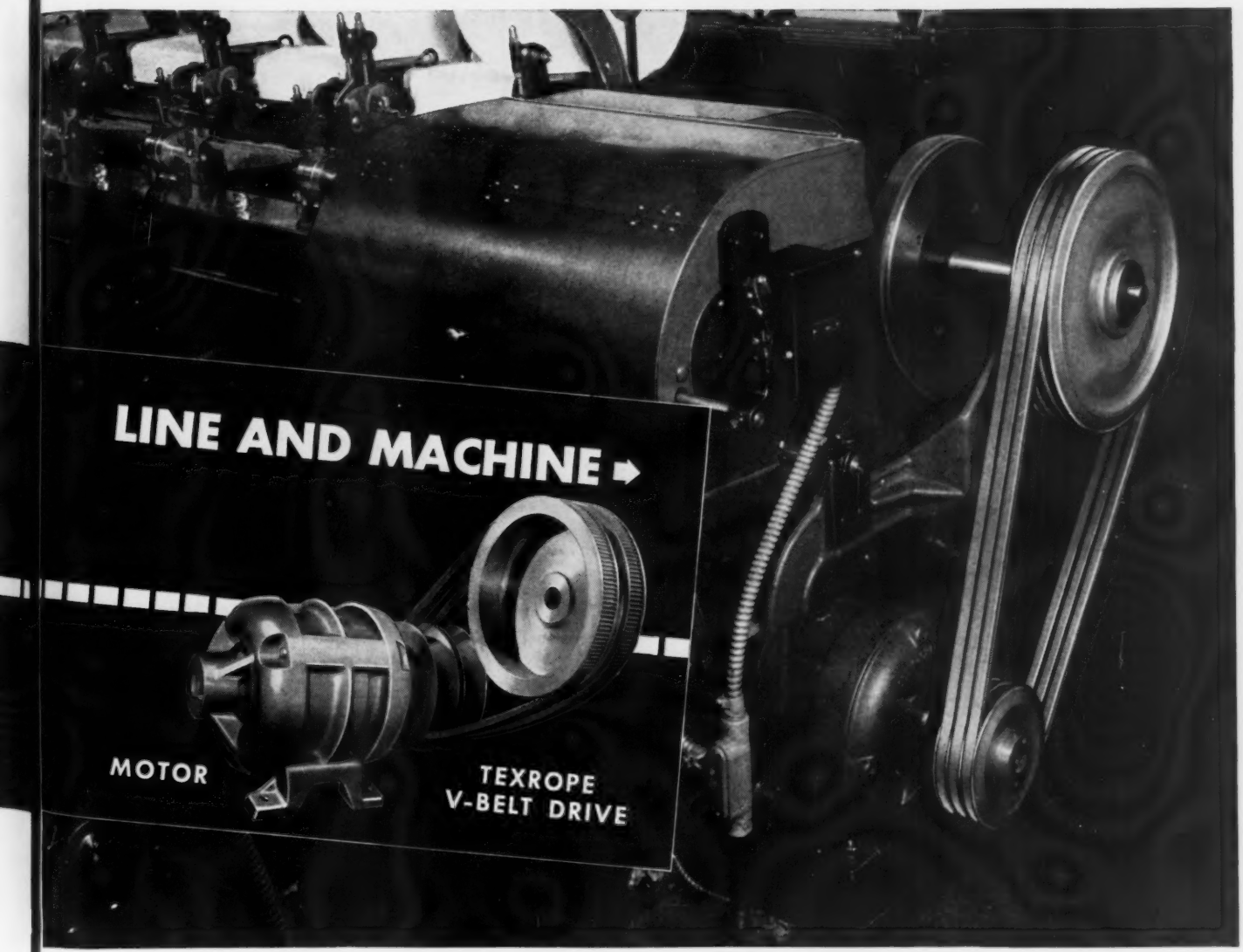
The operating speed of a machine can be changed in a matter of seconds with *Texrope* motion-control *Vari-Pitch* sheaves; in 5 to 8 minutes with stationary control *Vari-Pitch* sheaves. You get the production advantages of *exact* speed control, without excessive down time for change-overs.

A-C OFFERS COMPLETE SERVICE — POWER LINE TO MACHINE

You can be sure of uniform distribution of power throughout your mill with Allis-Chalmers dry-type distribution transformers. They're quickly and easily installed at mill load centers and will insure dependable power for all machines. And for efficient utilization of such power look carefully at the Allis-Chalmers line of textile mill motors. Along with dependable Allis-Chalmers control they're designed for long life operation with a minimum of maintenance. Together, these products offer you complete power line to machine service.

STEP IN PRODUCTION...

are Affected by



CONTACT ALLIS-CHALMERS TODAY!

There are conveniently located sales offices and authorized dealers throughout the United States ready to serve you . . . ready to give your equipment problem prompt, efficient attention. Call the office nearest you, or write ALLIS-CHALMERS, MILWAUKEE 1, WISCONSIN. A 2435

Texrope, Super-7, and Vari-Pitch are Allis-Chalmers Trademarks.

ALLIS-CHALMERS

Originator of the Multiple V-Belt Drive for the Textile Industry

A·P·T

Tapered WARP SPINNING BOBBIN

Credit Where Credit is Due

We continually look to machinery manufacturers and the textile industry itself for ways to improve our products. And when they "come through," as in the case of the A. P. T. Tapered Warp Spinning Bobbin, we believe in giving credit where credit is due. We hereby acknowledge our indebtedness to our many friends who took the trouble to tell us what they wanted.

Being a product of industry wide teamwork, the A. P. T. Tapered Warp Spinning Bobbin has, from its inception, been standard equipment for new warp spinning frames and it merits your confidence for the same reason.

THREE UNIQUE ADVANTAGES OF THIS BOBBIN ARE AS FOLLOWS: —

1. More and better spinning production due to the tapered construction of the bobbin. The larger diameter at the bottom puts less strain on the yarn at the start of the spin, and the tapered construction equalizes the tension over the full length of the traverse and permits larger packages of better production with fewer ends down.

2. More and better production in spooling and rewinding operations. The yarn comes off better from a tapered bobbin.

3. Finger tip seating. Spindle tip suspension and tough but resilient construction of bobbins permit positive seating with finger tip pressure. Thus the bobbins come off easily.

This tube has all the advantages of other A. P. T. Yarn Carriers and will improve the quality of your production at less cost to you. A. P. T. Yarn Carriers are adaptable to the spinning, twisting or weaving of all types of fibres.

AMERICAN PAPER TUBE COMPANY

ESTABLISHED 1898

WOONSOCKET, R. I. GREENVILLE, S. C.

CANADIAN REPRESENTATIVE: HUGH WILLIAMS & CO., TORONTO, CANADA

Luck? What do you mean, luck?

Employers Mutual—not luck—cheated Old Man River of this doomed victim

Night on a cofferdam construction job . . . a sudden slip . . . his foothold lost. a worker is plunged into the river's dark waters.

A rescue tug rushes out. its searchlight scans the waters . . . there, 500 yards distant. safe and floating, is the worker—his life saved—his family kept intact because he wore the life vest prescribed for him and his fellow workers by Employers Mutual.

* * *

In countless such cases is tragedy averted . . . lives saved . . . accidents forestalled . . . occupational disease reduced, *not* by luck, but as the direct result of skilled and careful planning by Employers Mutuals service groups. Everyone benefits—workers and their families, as well as employers, whose gain is reflected not only in higher production but in premium savings.

Employers Mutuals services to policyholders represent the highest standards in the fulfillment of contractual obligations. Cooperation of company-trained engineers, nurses, hygienists and claim adjusters is a powerful force in building safer business operations and more friendly employee relations. And—it opens the door to an entirely new conception of the benefits of insurance service.

Employers Mutuals write: Workmen's Compensation—Public Liability—Automobile—Group Health and Accident—Burglary—Plate Glass—Fidelity Bonds—and other casualty insurance. Fire—Extended Coverage—Inland Marine—and allied lines. All policies are nonassessable.

What does *your* fire insurance cover? Would an explosion, for instance, find your property unprotected? Send for our new booklet on "Fire Insurance." It will help you to understand what protection you now have and to check it against your requirements. Do you have our "Dictionary of Insurance Terms?" It is invaluable in helping to clarify the provisions of your fire and casualty insurance policies. Send for these informative booklets on your letterhead—or call your local Employers Mutuals representative.

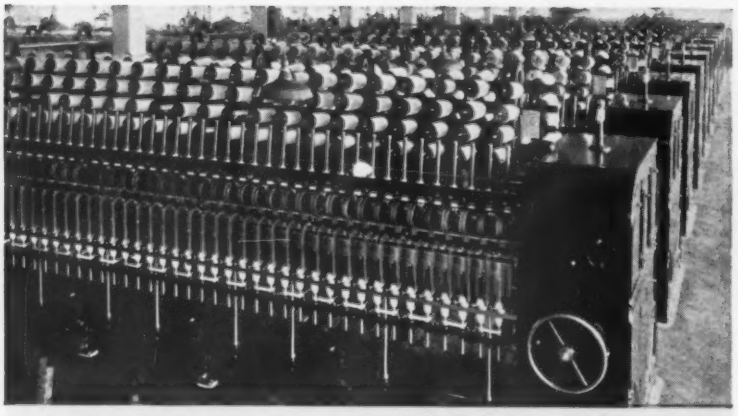
Employers Mutuals Policies Protect Lives, Health and Property

EMPLOYERS MUTUALS OF WAUSAU . . . make insurance understandable

EMPLOYERS MUTUALS OF WAUSAU

EMPLOYERS MUTUAL LIABILITY INSURANCE COMPANY OF WISCONSIN
EMPLOYERS MUTUAL FIRE INSURANCE COMPANY
HOME OFFICE: WAUSAU, WISCONSIN
Offices in Principal Cities—Consult Your Telephone Directory

FOR YOUR INFORMATION



SYTON* GIVES 10% TO 30% INCREASED YARN STRENGTH IN WOOLS

Mill trials have proved that Syton is equally as effective as an aid to spinning on the woolen system as on the worsted.

Applied at the picker as an additive to the emulsion, a maximum of 3% to 3½% Syton solution has produced the following important advantages:

1.	Increased yarn strengths (10% to 30%)
2.	Loftier yarns
3.	Less twist
4.	Less ends-down
5.	Faster production rate

In addition, there are several benefits obtained in the carding operation. The application of Syton allows the production of much loftier roping which is much easier to draft in the subsequent spinning operation. The stock is packed down in the card to a lesser degree, resulting in a more uniform roping and therefore more uniform yarn. The roping is also much stronger with less ends-down, both at the condenser and in the unwinding of the jack-spools. Less rubbing is necessary at the aprons. Better dressing efficiency and better weaving efficiency have also been noted as a result of the increased strength.

For more information on Syton for wool spinning check E1 in the coupon at right. Monsanto technicians will be glad to superintend a mill trial of Syton on your own product under your own conditions. Add a note if you would be interested. *Reg. U. S. Pat. Off. **E1**

STED USED FOR SOAPING RAYONS AND COTTONS

Recent tests show that Sted, Monsanto's powerful new industrial detergent, is a superior soaping-off agent for printed and dyed rayons and cottons. The new, non-sudsing textile cleanser removes and holds soil and excess coloring agents off the surface of fabrics and prevents redeposits on the fiber. *Low cost* Sted is strongly recommended for raw wool scouring and for back-washing, desizing, kier boiling and hosiery scouring. Check E-2 on the coupon for further information. **E2**

RESLOOM* FOR COTTON ADOPTED BY BANCROFT

Famous for its family of textile finishes, Joseph Bancroft & Sons is now using Monsanto's Resloom to enlarge its Everglaze line to include rayons as well as cottons and to produce subtle, low-lustre effects as well as crisp, glossy finishes. As Bancroft reports, these new effects "open a fresh world of fashions in spun rayons, cottons and mixtures... in fabrics satisfactorily stabilized." For information on Resloom C for crush-resistant cottons and rayons check E-3 and mail the coupon. **E3**

MERLON GIVES HERRINGBONE TWILL INCREASED ABRASION RESISTANCE

Tougher herringbone twill, for increased wear and tear, is possible with Merlon BR, Monsanto's vinyl butyral dispersion. For typical mill tests, samples of the fabric were treated with Merlon to deposit 6.3% resin solids on the weight of goods. The following improvement in abrasion resistance was noted:

Sample	Cycles to first hole
Control	2160
Treated	6790
Control 1 Wash	1500
Treated 1 Wash	4197
Control 3 Washes	1600
Treated 3 Washes	4146
Control 5 Washes	1536
Treated 5 Washes	4950
Control 10 Washes	1596
Treated 10 Washes	2791

Tests run on Tabor Abrader with #15 Wheel and 500 gram weight. Check E-4, on the coupon for further information. **E4**

REZGARD INSURES FLAME RESISTANCE

Flame tests prove that cellulosic fabrics will not support combustion or "afterglow" when treated with Monsanto's flame-retardant Rezgard. This product makes it possible and practical to treat textiles so that they will not glow more than one second after flame has been removed. Practical, easy-to-apply and low-cost, Rezgard makes no appreciable change in the appearance or "hand" of the fabric. For further information, check E-5 on the coupon. **E5**

RESLOOM BUILDS BETTER WOOLENS, WORSTEDS

The sales advantages of having your wools washable are many—but there's a good production reason for making them washable *with Resloom*. The Resloom treatment is an *additive* process—*it actually builds up the fabric.* In these days of high prices for wool stock and top, remember that Resloom *adds weight* and fullness to the cloth.

Resloomed wool merchandise has been selling successfully for more than a year. On literally hundreds of constructions Monsanto has convincing data that shows how effectively Resloom controls the shrinkage of woolens and worsteds. Check E-6 on the coupon below for more information on how Resloom can help you build better fabrics. **E6**

MONSANTO
CHEMICALS — PLASTICS

MONSANTO CHEMICAL COMPANY, TEXTILE CHEMICALS DEPT.
DESK TWT5, 140 FEDERAL ST., BOSTON 10, MASS.

Please send information on

E1 **E2** **E3** **E4** **E5** **E6**

NAME _____ TITLE _____

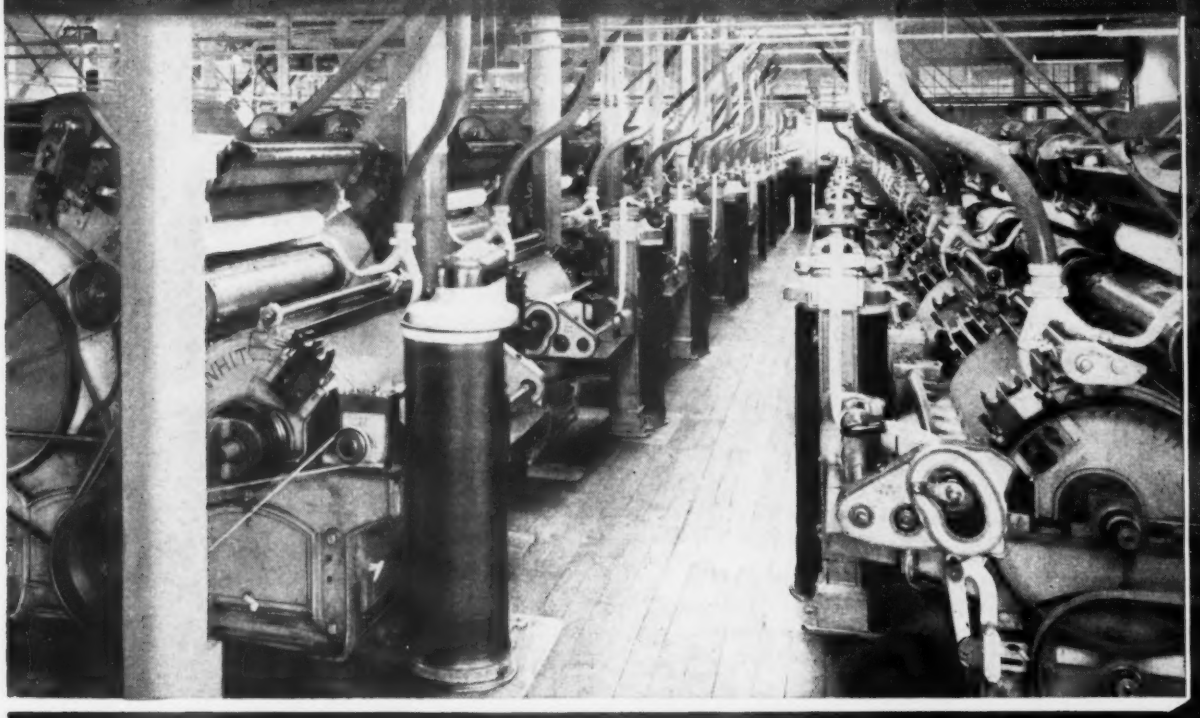
FIRM _____

ADDRESS _____

CITY _____ STATE _____

SERVING INDUSTRY . . . WHICH SERVES MANKIND

TUFFER Card Clothing Means Fine Even Sliver



YES, fine even sliver comes off each card that's clothed with Tuffer Card Clothing.

The Tufferizing Process—developed and exclusively owned and used by Howard Bros.—cuts and forms wires with an accuracy never before obtained in the making of card clothing. The wires are precision-formed and placed accurately and uniformly in the famous Tuffer Foundation. When drawn on the cylinder they fit snugly—sides perfectly parallel—every point in place.

These outstanding features of Tuffer Card Clothing give you proper carding—carding that means greater production of quality material. And you'll find, too, that the efficient, economical performance of Tuffer Card Clothing helps production in every department.

Let a Howard Bros. representative inspect your clothing. He will work with you in improving the quality of your carding, and will make practical recommendations that will mean better material at lower costs.

HOWARD BROS. MFG. CO. WORCESTER 8, MASSACHUSETTS

Southern Plants: Atlanta, Ga. and Gastonia, N. C.

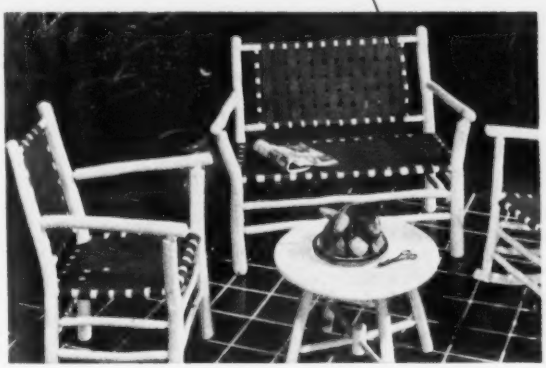
Branches: Philadelphia, Pa. and Blanco, Texas *Direct Representation in Canada* A-4

TUFFER CARD CLOTHING

IMPROVES PRODUCTION ALL ALONG THE LINE

SARAN

BY NATIONAL



"Woven of Saran" means fabrics that are right at home!

Indeed they are! For fabrics of Saran lend definite accent to the charm and easy-to-live-with qualities of today's furniture. Saran is the "something different" in textile materials, combining eye-appeal with unprecedented durability in tapes and fabrics that are equally at home outdoors or in luxurious interiors. And Saran fabric loveliness is long-lived as the fabric itself, and practically care-free, for the brilliant color and beauty are built right into the fiber. Pliable monofilaments of Saran, as fine as .005″, are easy to work and easy to weave, requiring no preparation for warping or quilling. New fields are open—new sales opportunities are yours—when you turn to fabrics "Woven of Saran."

REG. U.S. PAT. OFF.

THE *National plastic products company*
ODENTON • MARYLAND

New York: Empire State Building; Los Angeles: Bankers Building

SARAN

SARAN BY NATIONAL *denotes monofilament, rattan and tape manufactured by The National Plastic Products Company from Dow's Saran, and supplied to mills, weavers and other fabricators.*

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

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For Manufacturers and Merchants

Inquiries as to our services solicited

●

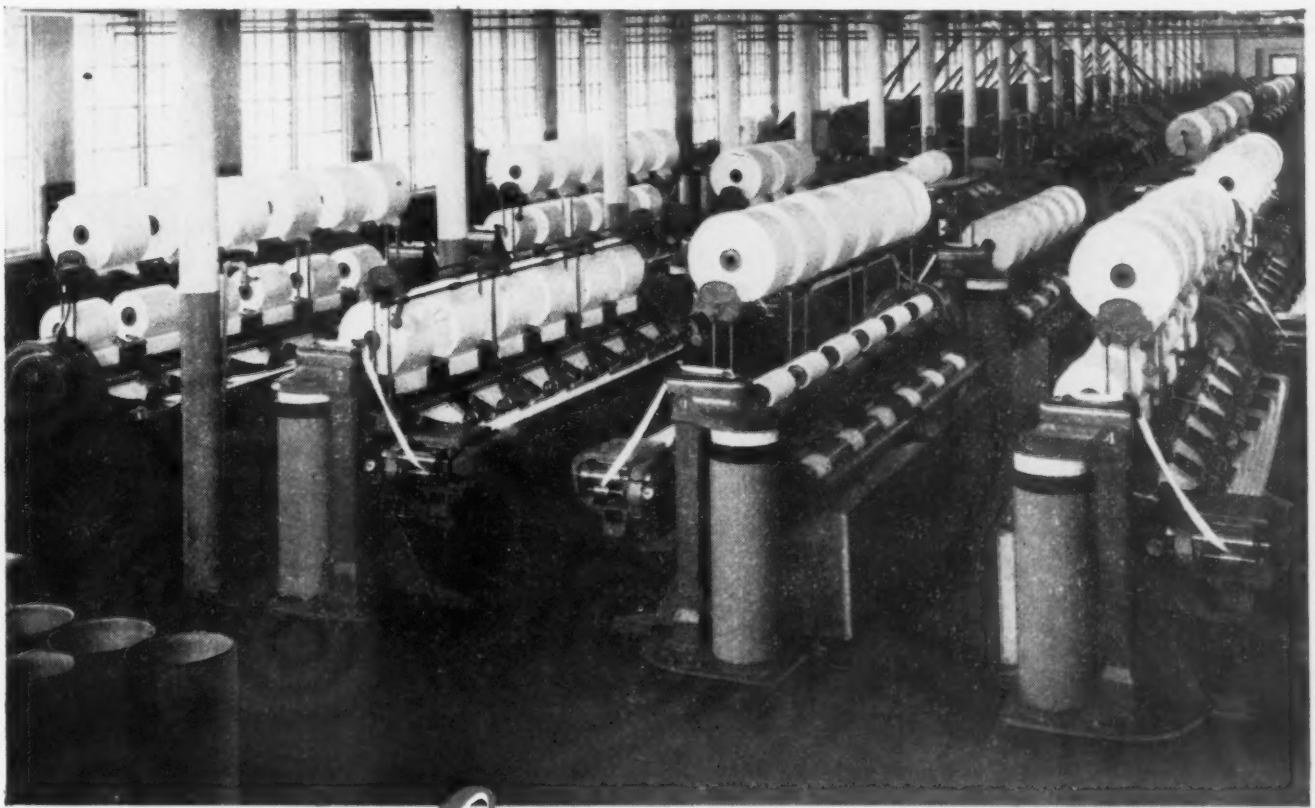
ESTABLISHED 1840

with those who value QUALITY FIRST

THE NEW WHITIN MODEL "K" COMBER

If you are a manufacturer of combed yarns and your first consideration is the QUALITY of your product, it seems reasonable to believe that you are interested in machinery that will not only insure but maintain that quality.

The new WHITIN Model "K" Combers have been tested under the most exacting mill conditions. Customers' figures prove that they deliver record amounts of combed sliver at an extremely low maintenance cost. They are easily adjusted, serviced and cleaned. A combination of progressive engineering, expert workmanship and mill-tested components, the Model "K" Comber is your guarantee of FIRST QUALITY yarn.



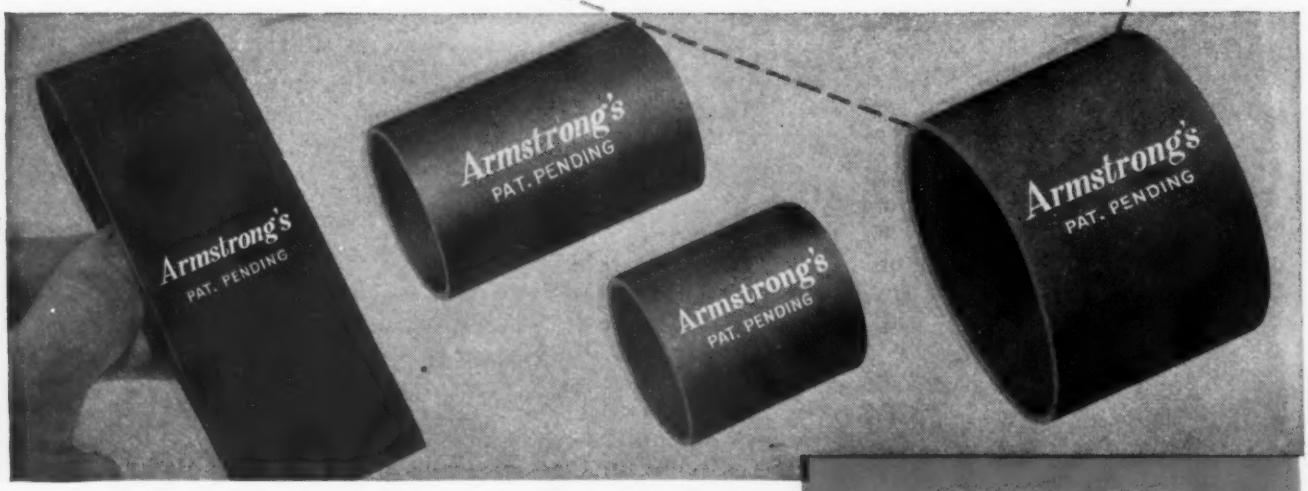
Model K Comber installation at Bates Mfg. Co., Lewiston, Me.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. • ATLANTA, GA.

Accotex Aprons reduce costs



Armstrong's Accotex Aprons are available for single apron and double apron types of long draft equipment, and for roving as well as spinning frames.

ACCOTEX COTS
CORK COTS

Many are still producing quality yarn . . . after six years on mill frames

How long do the most durable aprons on your frames last? Many of Armstrong's Accotex Long Draft Aprons have been in continuous production for more than six years . . . and they still are producing top-quality yarn. This long life not only reduces apron costs but also means fewer shutdowns for replacements. Thus Accotex saves you money, labor, and production time.

The reason for this service record is the special Accotex Apron construction developed by Armstrong. Heavy layers of non-oxidizing synthetic rubber enclose a sturdy, non-stretch cord interliner. This provides a tough wearing surface on both the inside and outside of Accotex Aprons. The reinforced construction insures constant fiber control, too. Accotex Aprons can't stretch, grow, or sag.

You also get these important advantages when you install Accotex Aprons on your spinning and roving frames:

UNIFORMITY—All Accotex Aprons have the same composition throughout, and dimensions of every size are accurate.

SEAMLESS CONSTRUCTION—Accotex Aprons have no seams—no structural weaknesses to cause premature failure.

CLEAN RUNNING—Accotex Aprons do not crack or scuff. Thus they help produce cleaner-running work with less waste.

REDUCED LAPPING—Accotex Aprons are not affected by temperature or humidity. They perform with a minimum of lapping.

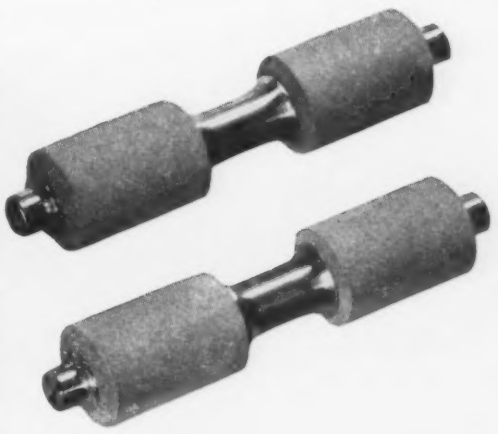
GOOD FRICTION—The efficient "grip" of Accotex Aprons reduces slippage.

Get cost figures on Accotex Aprons. Then check their durability and economy on your frames. Your Armstrong representative will gladly help you arrange a test installation. Call him today. Or write for samples, prices, and information on your particular application. Armstrong Cork Company, Textile Products Department, 8305 Arch Street, Lancaster, Pennsylvania.

ACCOTEX COTS . . . by the makers of Accotex Aprons

Armstrong's NC727 Accotex Cot gives you the advantages of both synthetic rubber and cork. This combination of toughness and high friction provides maximum eyebrow resistance in a synthetic cot. It also results in better drafting, high yarn strength, less slicking up. In addition, Accotex Cots offer long initial service life. They can be rebuffed 5 or 6 times.

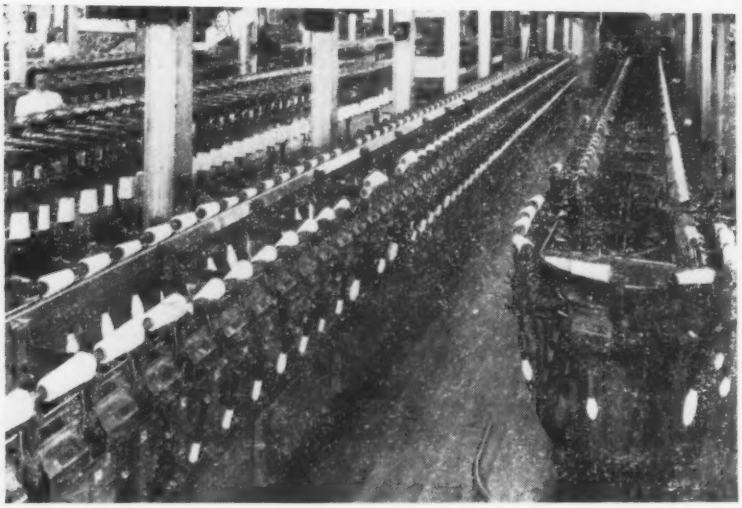
Armstrong's J490 Accotex Cot is outstandingly superior in resistance to top roll laps. You can prove this right on your own frames. It is the cot to use where lapping is a serious consideration when running either wool or synthetic fibers on standard cotton system equipment.



Armstrong's Accotex Cots are now serving more spindles than any other roll covering. In addition to the NC727 and the J490, Accotex Cots are made in other formulations, with and without cork, for special services. Ask your Armstrong representative for recommendations on the best type for you.

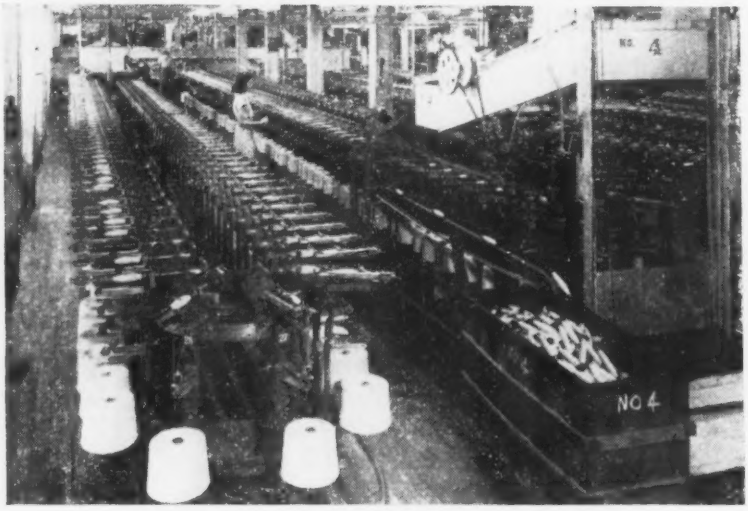
ARMSTRONG'S ACCOTEX APRONS

LEADERS IN THE AUTOMATIC WINDING FIELD



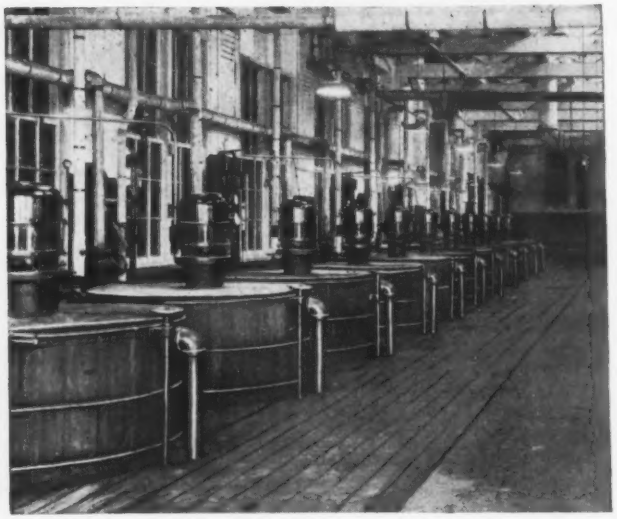
The only Automatic Winder that will wind the standard 6" traverse cheeses, warping cones, knitting cones, etc.

Production 900 to 1000 bobbins per hour with one operator



The only fully automatic loom bobbin winder. The empty supply quills and the full wound quills are handled automatically without attention by the operator.

Production 2000 or more quills per hour per operator; cotton, spun fiber, worsted, linen, paper, and filament yarns.



Dyeing and drying equipment for worsted and cut fiber top and for yarns.

ABBOTT MACHINE COMPANY

WILTON, N. H.

Southern Office ***Greenville, S. C.***

THE ONE SPREADER

FOR EVERY MODEL LOOM

There is only one HUNT SPREADER, the patent of Hunt Machine works, Since 1942 multiplied thousands of Hunt Spreaders have been installed on looms of all makes—old models and new. Results, from the words and letters of pleased textile executives, are these:

"Less Vibration" . . . "Better Fabric."

"Reduced Weave Room Maintenance Cost."

"Higher Loom Speeds . . . More Picks."

"Fewer Seconds and Less Breakage"

"14% More Cloth Than When Looms Were New"

"You Modernized Our Weave Room."

Write or wire today to learn what Hunt Spreaders can do for YOUR looms.

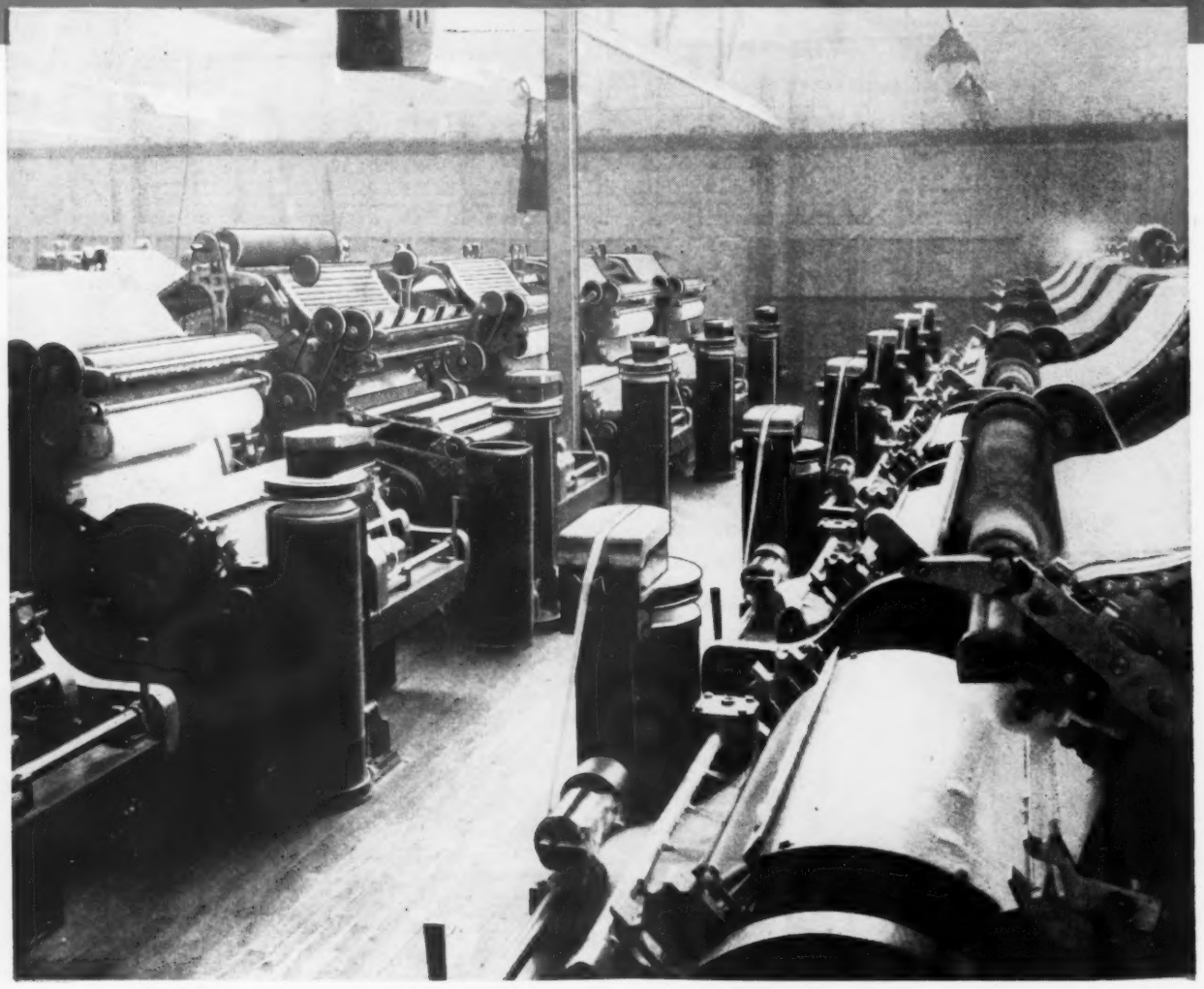
HUNT MACHINE WORKS, INC.

SUCCESSORS TO

MOUNTAIN CITY FOUNDRY AND MACHINE CO. AND HUNT LOOM CO.

200 ACADEMY STREET TELEPHONE 200 GREENVILLE, SOUTH CAROLINA

H & B REVOLVING



A Recent Installation

The above photograph shows *a recent installation* of H & B Revolving Flat Cards with individual motor drive at the Veterans' Mill in Calhoun, Georgia. Mr. C. M. Jones, President of the mill, which makes coarse yarn for chenille rugs and spreads, states that these H & B cards are doing "excellent work."

H&B AMERICAN

Builders of Modern

FACTORY, EXECUTIVE OFFICES AND EXPORT

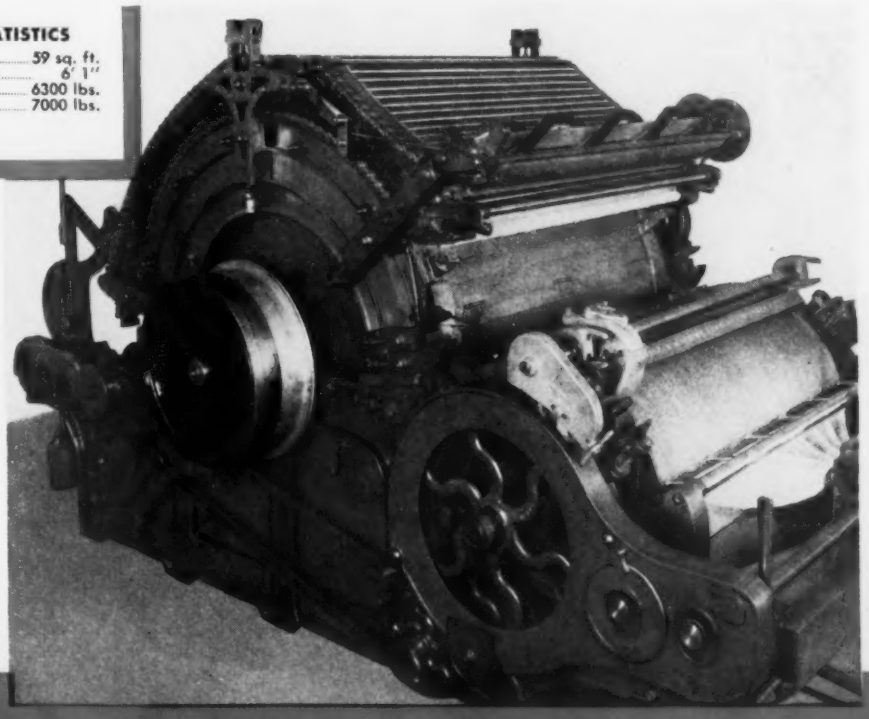
FLAT CARDS

The "excellent work" mentioned by Mr. Jones is characteristic of H & B Revolving Flat Cards. The following features, which are the result of quality design, materials and workmanship, make this kind of performance possible:

1. 5 distinct setting points, used singly or in any combination, to control setting to .001 inch.
2. Bends and flats perfectly concentric with the cylinder at every point.
3. Cylinder bearings made of phosphor bronze.
4. Pedestals adjustable either vertically or horizontally.
5. Feed roll weights below, instead of above, the roll.
6. Drop lever with new disengaging handle, and new actuating foot treadle.
7. Patent method for securing clothing to the flats.
8. Patent top grinding arrangement for grinding from the working seating of the flats.

INSTALLATION STATISTICS

Overall floor space	59 sq. ft.
Overall height from floor	6' 1"
Net weight	6300 lbs.
Gross weight (domestic)	7000 lbs.



MACHINE CO.

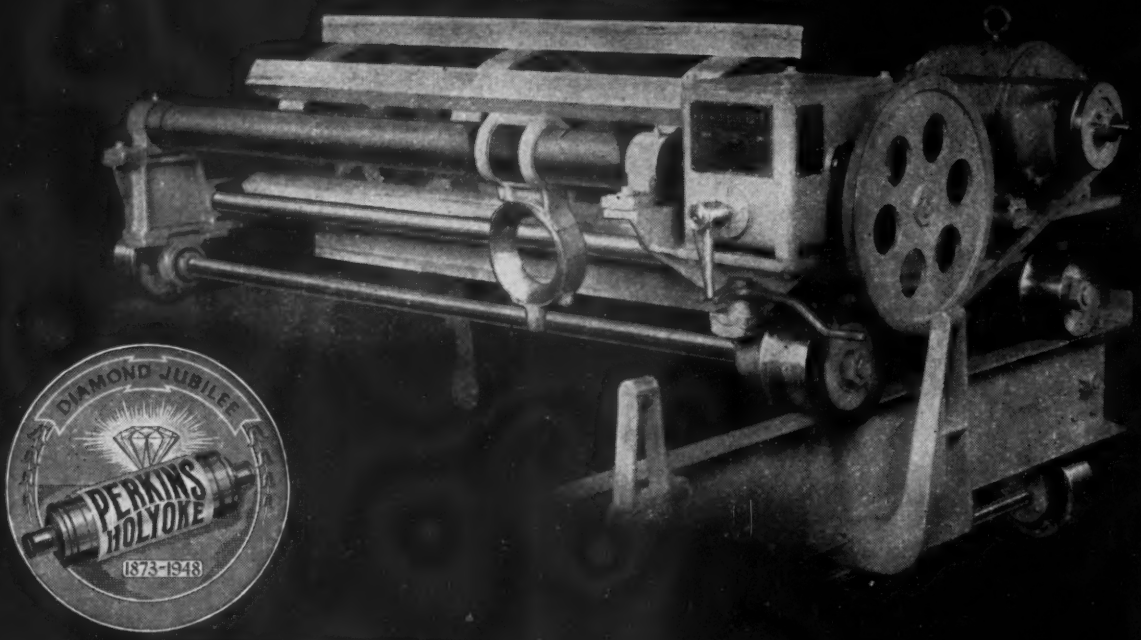
Textile Machinery

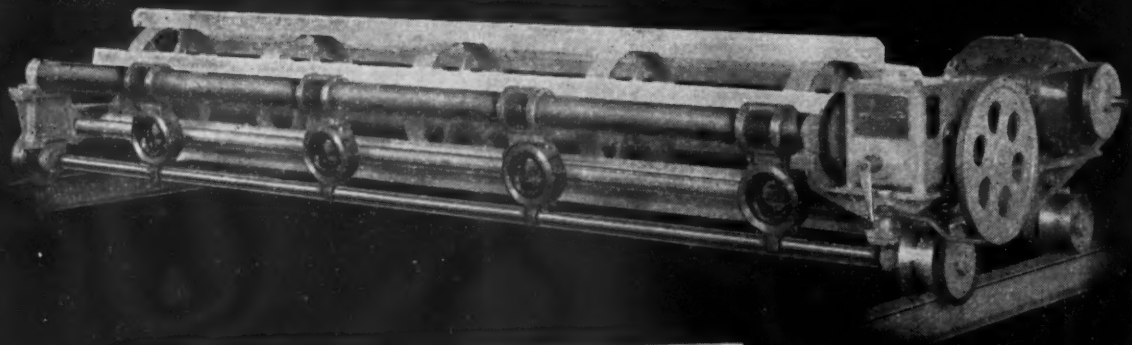
DIVISION PAWTUCKET, RHODE ISLAND, U. S. A.

BRANCH OFFICES
ATLANTA, GA.
815 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING
CHARLOTTE, N. C.
1201 JOHNSTON BUILDING

PERKINS AUTOMATIC BIN PILERS

PATENTED





You cannot afford to pile by hand

B. F. PERKINS & SON, INC.

ENGINEERS AND MANUFACTURERS

HOLYOKE • • • MASSACHUSETTS

Veeder-Root Vantage-Points

VEEDER-ROOT 2-3 PICK COUNTERS

ARE EASIER TO READ

They're easier to read because the broad-faced wheels carry large, bold, lithographed figures . . . figures that are on the same plane with the surface of the wheel . . . *not sunken figures.*

So you can read your production "news" easily from several feet away . . . without eye-strain.

This is one of many Veeder-Root Vantage Points which add up to give you top value in Veeder-Root 2-3 Pick Counters. *Look at all you get:*

QUICK CONVERTIBILITY
YALE LOCK PROTECTION
COMPRESSION CLAMP DRIVE
ALL PARTS CORROSION-TREATED
STRONG, LOW-WEIGHT WHEELS
STEEL MOUNTING INSERTS
EASY-RESETTING KNOBS

Have your Veeder-Root Field Engineer show you exactly what these Veeder-Root Vantage Points mean.

VEEDER-ROOT 2-3 Pick Counters

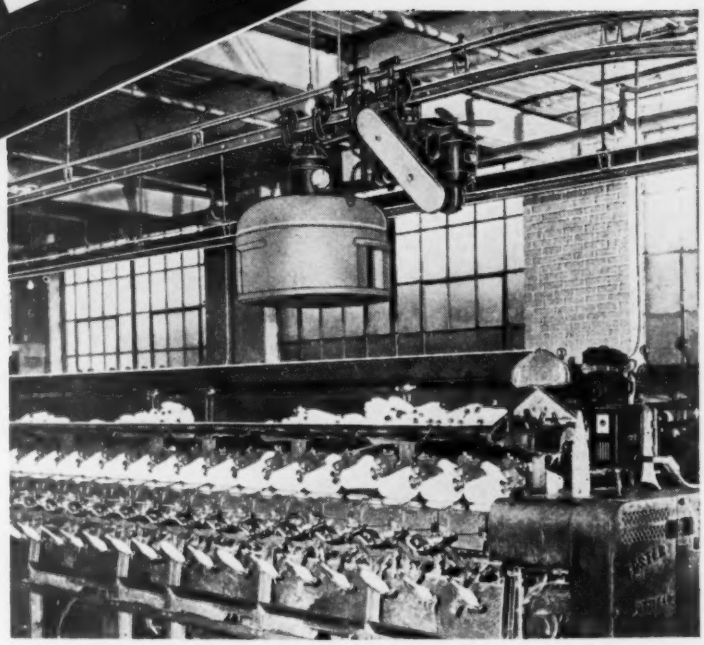
Quickly Convertible from 2 to 3-Shift Operation . . . Right in Your Mill

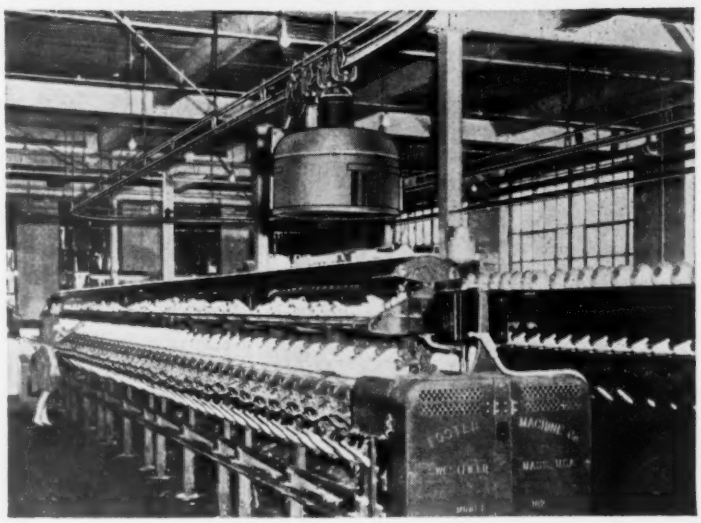
Reset and Non-Reset

VEEDER-ROOT INC.
HARTFORD 2, CONN.
GREENVILLE, S. C.

OFFICES IN: Boston, Chicago, Cincinnati, Cleveland, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco, Montreal, Buenos Aires, Montevideo, Mexico City. In England: Veeder-Root Ltd., Dickinson Works, 20 Purley Way, Croydon, Surrey. In Canada: Veeder-Root of Canada, Ltd., Montreal.

Clean Winders MEAN Clean Yarn FOR PROFITABLE PRODUCTION



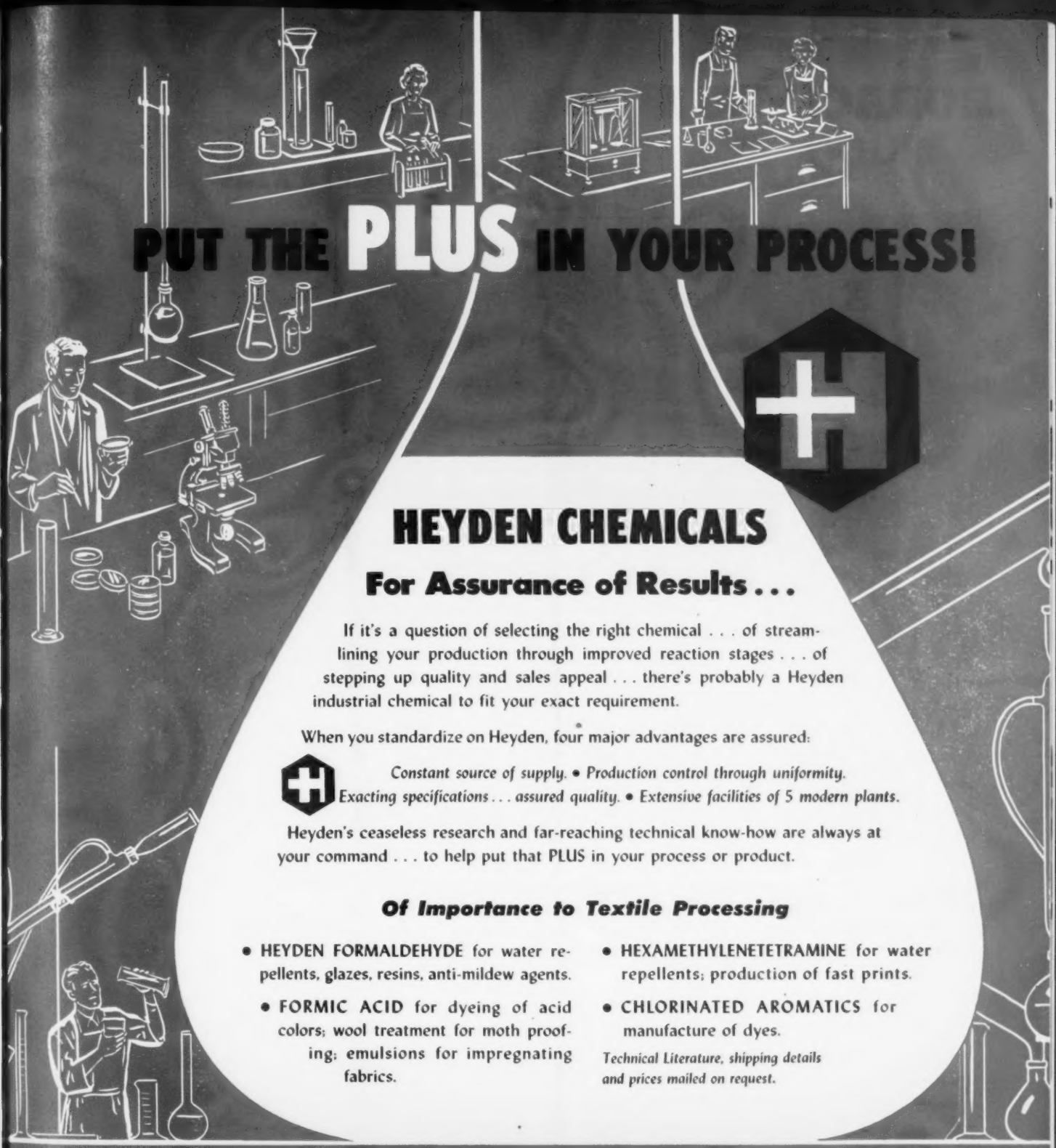


Take a typical example—in a combed yarn mill in North Carolina, four winders were relocated, making it necessary to shut down the cleaning system for five weeks. During this time the yarn, in spite of all precaution, became so full of fly that many customers complained because of machine stoppage. This condition was entirely eliminated when the blower was put back in operation.

You, too, can eliminate fly, lower cleaning costs, reduce machine stoppage and get better running work with American MonoRail Automatic Overhead Cleaners. Write for the new 24 page book explaining cost saving advantages or let an American MonoRail Engineer tell you the complete story of Controlled Cyclonic Cleaning and Overhead Handling.

THE AMERICAN MONORAIL COMPANY

13108 ATHENS AVENUE CLEVELAND 7, OHIO



PUT THE PLUS IN YOUR PROCESS!

HEYDEN CHEMICALS

For Assurance of Results . . .

If it's a question of selecting the right chemical . . . of streamlining your production through improved reaction stages . . . of stepping up quality and sales appeal . . . there's probably a Heyden industrial chemical to fit your exact requirement.

When you standardize on Heyden, four major advantages are assured:

Constant source of supply. • Production control through uniformity. Exacting specifications . . . assured quality. • Extensive facilities of 5 modern plants.

Heyden's ceaseless research and far-reaching technical know-how are always at your command . . . to help put that PLUS in your process or product.

Of Importance to Textile Processing

- **HEYDEN FORMALDEHYDE** for water repellents, glazes, resins, anti-mildew agents.
- **FORMIC ACID** for dyeing of acid colors; wool treatment for moth proofing; emulsions for impregnating fabrics.
- **HEXAMETHYLENETETRAMINE** for water repellents; production of fast prints.
- **CHLORINATED AROMATICS** for manufacture of dyes.

Technical Literature, shipping details and prices mailed on request.

Serving Industry Through Finer Chemicals

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CHICAGO OFFICE, 20 North Wacker Drive
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FINE HEYDEN CHEMICALS

Benzaldehyde • Benzoates • Benzoic Acid • Benzyl Chloride • Bromides • Chlorinated Aromatics • Medicinal Creosotes • Formates Formaldehyde • Formic Acid • Glycerophosphates • Medicinal Guaiacols • Hexamethylenetetramine-M.D.A. • Paraformaldehyde Parahydroxybenzoates • Penicillin • Pentaerythritols • Salicylates

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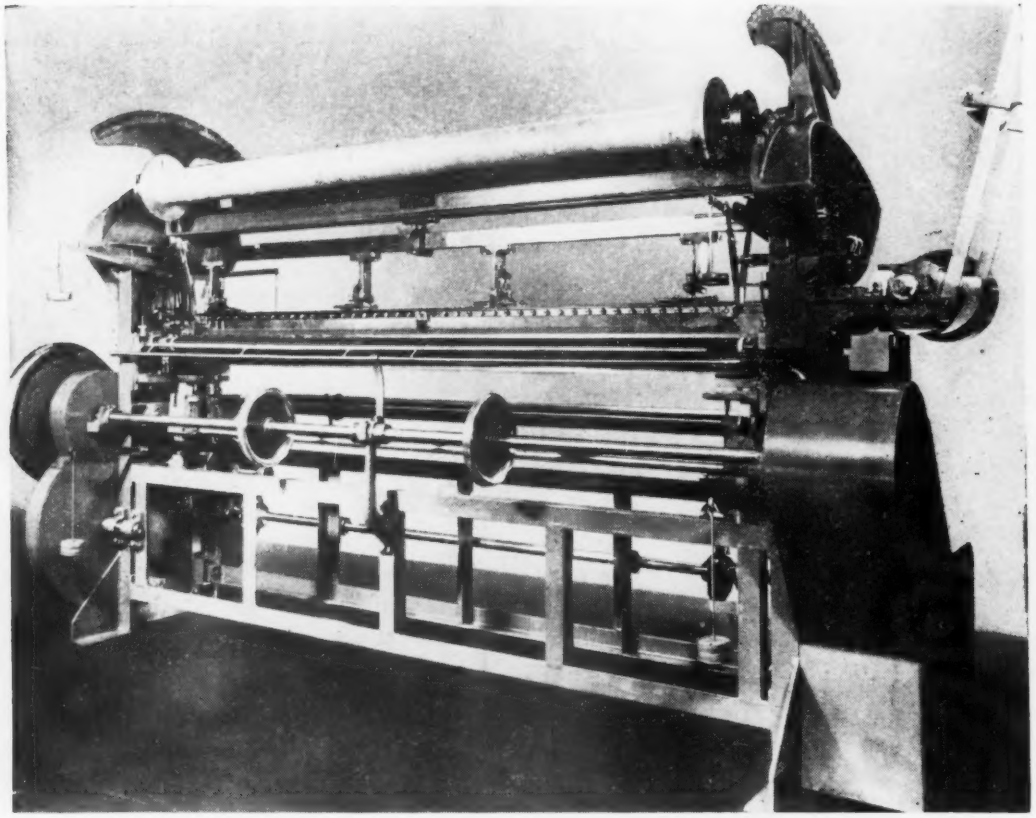
ROBACZYNSKI

RASCHEL TYPE WARP KNITTER



What do you want to make?

Fabrics, for elastic foundation garments, mosquito netting, hair nets, outerwear, underwear, knitted ties, curtain lace? With this machine you can knit a multitude of fabrics with any yarn from 10 denier (worsted yarns from 5 to 50 counts) at speeds up to 250 courses per minute.

The Robaczynski Raschel Type Warp Knitter is a simple, smooth running, steel fabricated machine, for hand or power operation. It is equipped with sand rollers, two needle beds, four guide bars and pattern drum wheel system. Six bars if necessary or less if so desired.

There are so many fabrics you can knit better and cheaper on this Raschel type warp knitter you owe it to yourself to investigate. Tell us your problems. There's no obligation. Early deliveries are assured.

WE ALSO MANUFACTURE

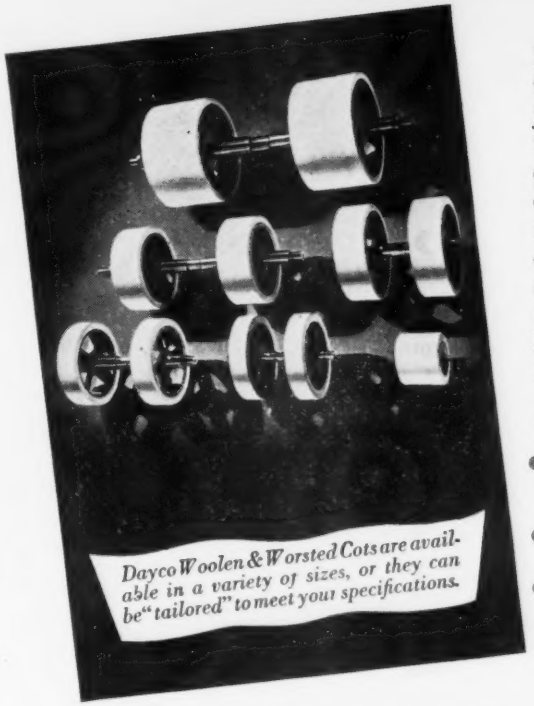
TRICOT MACHINES • V TYPE FLAT KNITTING MACHINES • PURL STITCH OR LINK & LINK MACHINES • BORDER MACHINES
• TUBULAR TRIM KNITTING MACHINES • CIRCULAR STRING & BELT MACHINES • COMPLETE INFORMATION ON REQUEST

ROBACZYNSKI MACHINE CORPORATION

340 TEN EYCK ST., BROOKLYN 6, N. Y.

AFTER 31,368* HOURS

Daycos spin uniform yarn!



Dayco Woolen and Worsted Cots give this kind of record service because they're designed and engineered for their specific job. Specially compounded to resist moisture, temperature extremes and other adverse operating conditions, Daycos just don't seem to wear out. After years of service their original coefficient of friction and resiliency is retained and they show no signs of grooving or other deterioration. This means Dayco-equipped mills enjoy lower production costs—increased efficiencies. A trial installation on your spinning or drawing frames will convince you Dayco Cots produce more uniform yarn, at less cost. Write Dayton Rubber, Dayton, Ohio or *Textile Division—Main Sales Office: Woodside Building, Greenville, S. C.*

REASONS Dayco COTS SAVE TIME, MONEY AND LABOR

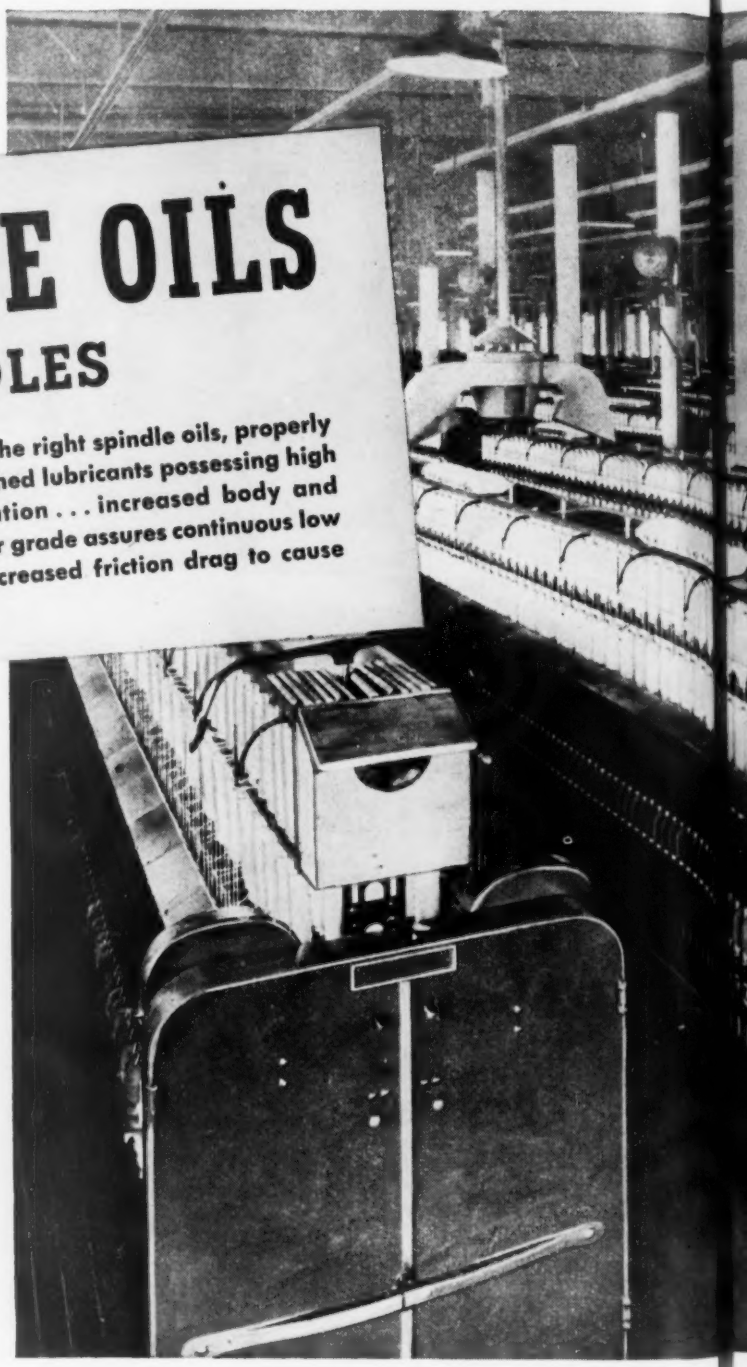
- Any combination of wool, rayon and mohair can be run equally well with a minimum of lint.
- Reduce matching-up by getting more uniformity in production.
- Increase cot life from as little as 60 to 90 days to estimated life of 10 to 15 years—based on years of field tests.
- Eliminate wasted time and labor in removing and resetting the pressure on rolls after shutdowns.
- As much as 66% savings in labor and time applying cots to arbors.
- Save valuable time for the spinning frame mechanics—as replacements of rolls on frames are reduced to the absolute minimum.
- Greatly reduce power consumption on spinning and drawing frames.

*Two 8-hour shifts per day, 5 days per week—over 7½ years.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

FOR LOW POWER



LILY WHITE OILS
ON SPINDLES

Reduction of power costs results from use of the right spindle oils, properly applied. Sinclair LILY WHITE OILS are finely finished lubricants possessing high stability characteristics to resist deterioration . . . increased body and deposits . . . during service. Use of the proper grade assures continuous low power consumption because there is no increased friction drag to cause power loss.

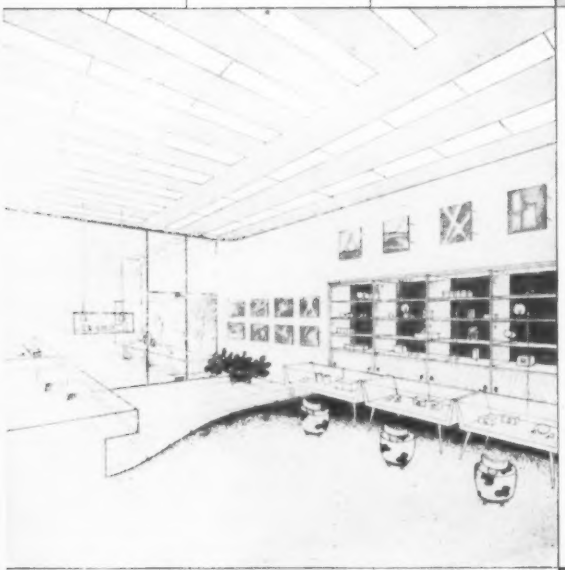
Besides contributing to low power consumption Sinclair LILY WHITE OILS help reduce maintenance cost by promoting long bolster life. Their worth was proven in many plants during the war years when mills were operating at top capacity and replacement parts were difficult to obtain. LILY WHITES come in viscosities to suit all operating speeds. Our lubrication counsel is available in solution of your problems.

SINCLAIR

TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL
WRITE SINCLAIR REFINING COMPANY, 630 FIFTH AVE., NEW YORK 20, N. Y.

miller troffer lighting can be installed to form CEILINGS UNLIMITED*



Camera store — Architect: Jose A. Fernandez, New York

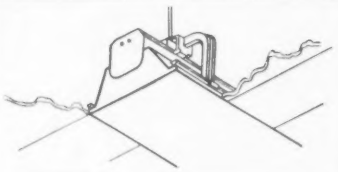
Application of Miller Fluorescent Troffer Lighting Systems is boundless, giving stores, schools, offices, factories good light as an integral part of the architecture, plus this added benefit — ceiling patterns as desired . . . CEILINGS UNLIMITED.

Miller Lighting Service is all-inclusive. It covers the needs of Planned Commercial and Industrial Lighting.

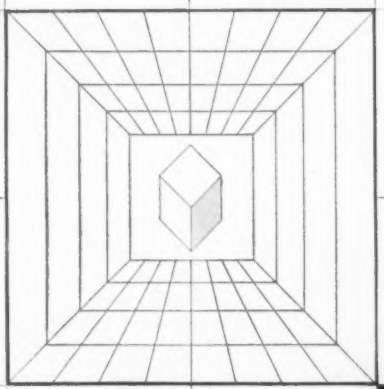
Miller 50 and 100 Foot Candlers (Continuous Wireway Fluorescent Lighting Systems) have been established as standard for general factory lighting. And Miller incandescent and mercury vapor reflector equipment has broad factory and commercial application.

Miller field engineers and distributors, conveniently located, are at your call.

*Trade Mark



Miller Furring Hanger (patented) simplifies installation. Miller continuous wireway cuts wiring and fitting costs. All units are Bonderized for corrosion resistance.



THE miller COMPANY
SINCE 1844
ILLUMINATING DIVISION, MERIDEN, CONNECTICUT

ILLUMINATING DIVISION: Fluorescent, Incandescent, Mercury Lighting Equipment; HEATING PRODUCTS DIVISION: Domestic Oil Burners and Liquid Fuel Devices; ROLLING MILL DIVISION: Phosphor Bronze and Brass in Sheets, Strips and Rolls

3

THEN, AS NOW, COLOR SOLD TEXTILES

Although the Spaniards, lusting for gold, crushed the Aztec Empire in 1519, the natives preserved a vestige of their culture in the products of their handiwork. As the centuries passed, their artistry became part of the Mexican heritage, until brilliant yarn dyed blankets and hangings were a permanent fixture in the homes of the wealthy grandees of New Spain. Then, as now, COLOR sold textiles.

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

PROVIDENCE • PHILADELPHIA • GREENVILLE • CHATTANOOGA

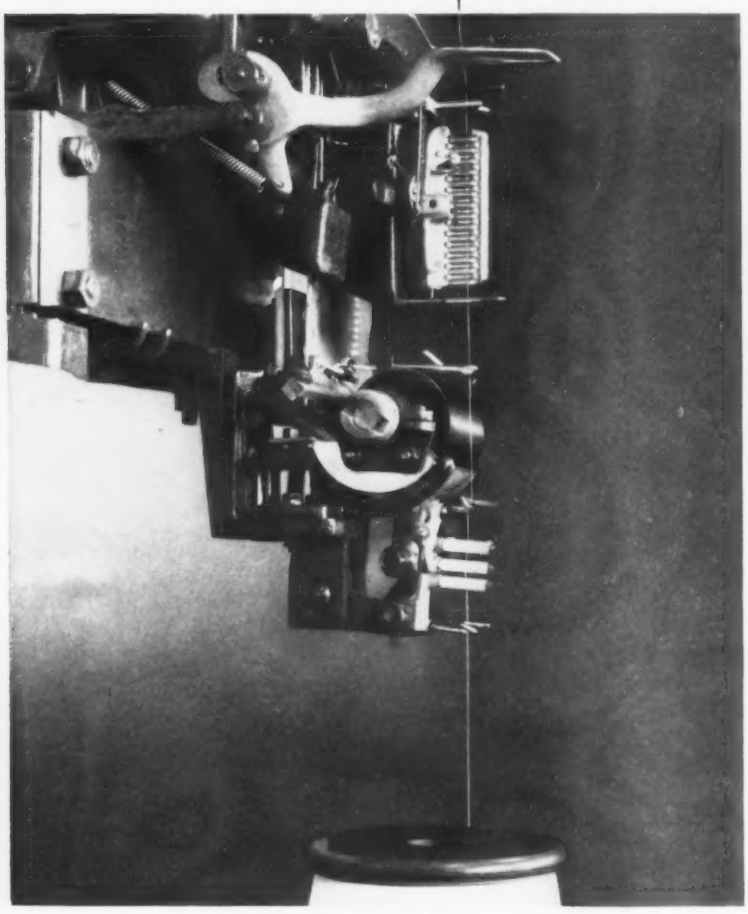
New York Representatives, 40 Worth St.

a straight line to better quality

WITH THE FOSTER MODEL 75!

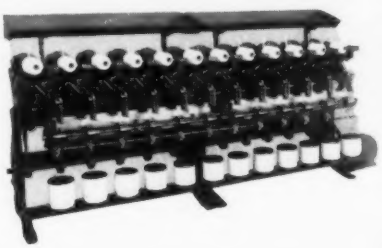
THE FOSTER Straight Line Oiling Attachment is one of the many features incorporated in the Foster Model 75 which insure put-ups that are your "ambassadors of quality". This device conditions yarn to the required degree and maintains a virtually straight line feed from supply package to the thread rod over the yarn cleaner.

This attention to the quality of your winding is typical of Foster Model 75 production. The Model 75 is designed to protect your expensive nylon, silk and rayon yarns and best emphasizes their inherent characteristics. Some of the features which help achieve this quality production are as follows:



FOSTER Straight Line Oiling Attachment

1. Winds standard Foster convex base cones, or, with special added attachment, pineapple cones.
2. When equipped to wind pineapple cones the starting traverse may be varied between 4" and 6".
3. Depending on type of yarn and other conditions, cone density may also be varied between 40 and 70 by Durometer reading.
4. A slow starting device prevents yarn strain.
5. Total enclosure of lubricated parts prevents yarn soilage.
6. Ball bearings on spindle and drive shafts reduce power consumption.
7. 7" diameter cam guarantees smoother traverse, particularly at point of reversal, less wear on parts and less vibration.
8. The Foster Zenith Yarn Cleaner with clearances from .001 to .040 inch, as well as other Foster yarn cleaners.
9. Finger or ladder type chromium plated tensions allow the yarn passing through to traverse back and forth, thus eliminating wear of the tension.



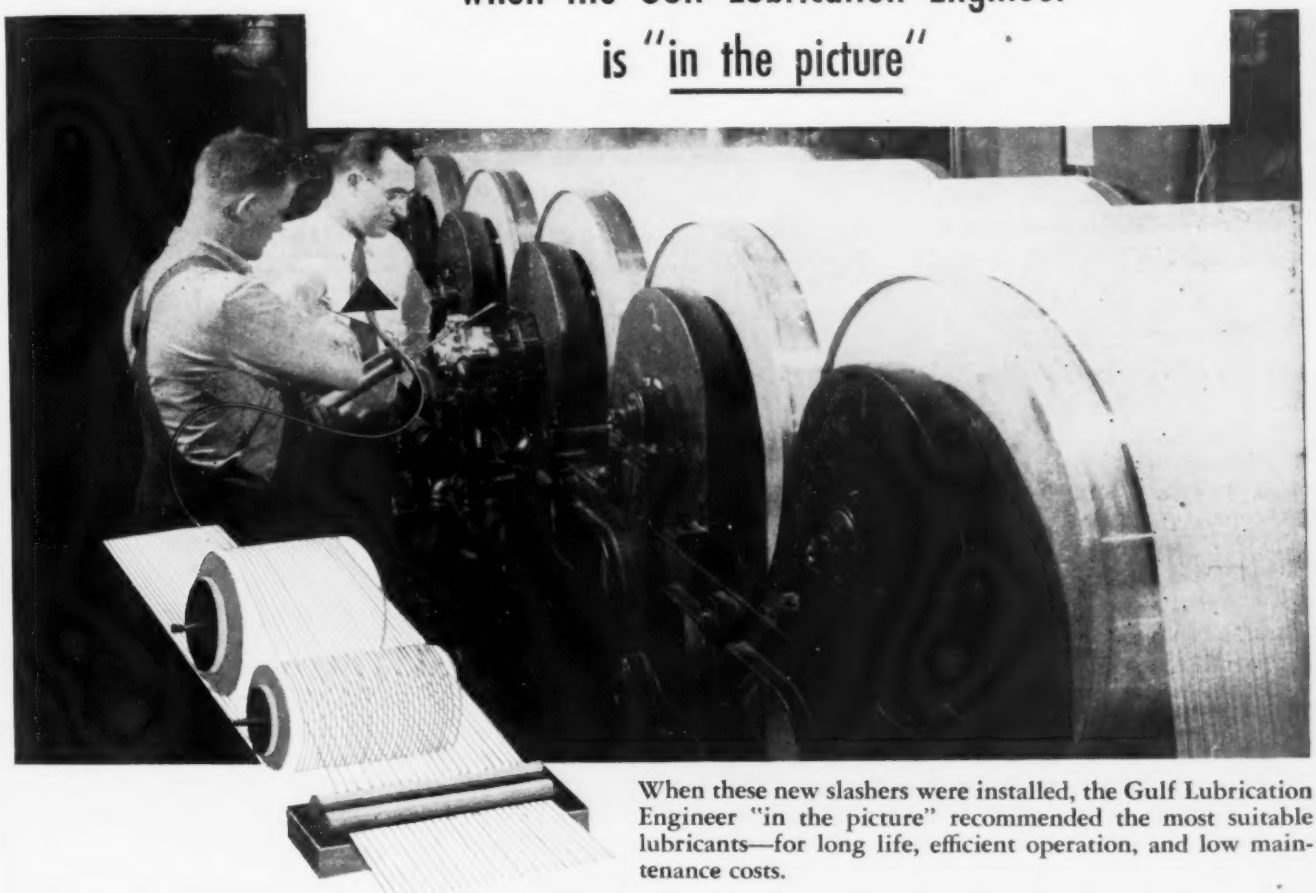
SEND FOR BULLETIN A-92-A

FOSTER MACHINE CO.
Westfield, Massachusetts

SOUTHERN OFFICE: Johnston Bldg., Charlotte, N. C.; CANADIAN REPRESENTATIVE: Ross Whitehead & Co., Ltd., University Tower Bldg., 660 Ste. Catherine St., West, Montreal, Quebec; EUROPEAN REPRESENTATIVE: Muschamp Taylor Ltd., Manchester, England

New SLASHERS get the right start for a long life...

when the Gulf Lubrication Engineer is "in the picture"



When these new slashers were installed, the Gulf Lubrication Engineer "in the picture" recommended the most suitable lubricants—for long life, efficient operation, and low maintenance costs.

IF you're installing new slashers—or any other new equipment—you'll want to insure your large investment as thoroughly as possible against premature mechanical failures, below-par performance, and high maintenance costs.

Here you'll find the services of a Gulf Lubrication Engineer very helpful. He will make a complete survey of each unit of equipment and study your particular operating conditions to determine their influence on lubrication.

After analyzing each important factor, he will recommend for each piece of equipment the Gulf quality oils or greases which will provide maximum protection against wear. Then you can be sure you've made the right start—not only for a long life, but for a trouble-free life with low costs for maintenance.

For the co-operative counsel of a Gulf Lubrication Engineer, write, wire, or phone your nearest Gulf office today.

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Division Sales Offices:

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Announcing the New

Check these IMPORTANT ADVANTAGES of this new GEARMOTOR ..write for additional information!

UNLIMITED ADAPTABILITY—Available in single, double and triple reductions, providing a wide range of speeds with motor ratings from 1 to 60 hp. NEMA "D" type flange mounting permits use of any type enclosure in A-c. or D-c. motors.

COMPACT DESIGN—Design conserves space to greatest extent possible without sacrifice of strength or accessibility. This compactness simplifies the direct application of electric drive to individual machines.

BALANCED, INTEGRATED DYNAMICS—FOR STRENGTH—Design of gear unit in the higher ratios lends triangular stability based on Balanced, Integrated Dynamics: High grade grey iron cast frame gives added strength and shock resistance. Heaviest loads combated by direct transfer; only a bearing separates load on shaft from feet on multi-reduction units.

SIMPLIFIED ASSEMBLY—Motor and gear unit, each self-contained, are readily separated; gears in multi-reduction units may be inspected without uncoupling from driven machine.

PRECISION-BUILT MOTORS—Reliance *Precision-Built* A-c. and D-c. Motors provide dependable power for all models—fit perfectly with gear unit.

QUIET, LONG-LIVED GEARS—Helical gears are alloy steel—precision-machined, wear-hardened and arranged in simple train for quiet operation and long life.

POSITIVE LUBRICATION—Splash system with large oil reservoir assures thorough and constant lubrication of all parts of gear unit. Anti-friction bearing construction. Leak-proof housing. Motor, greased independently, has double-shielded ball bearing design that eliminates all lubrication worries.

Philadelphia GEAR WORKS INCORPORATED

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Industrial Gears and Speed Reducers
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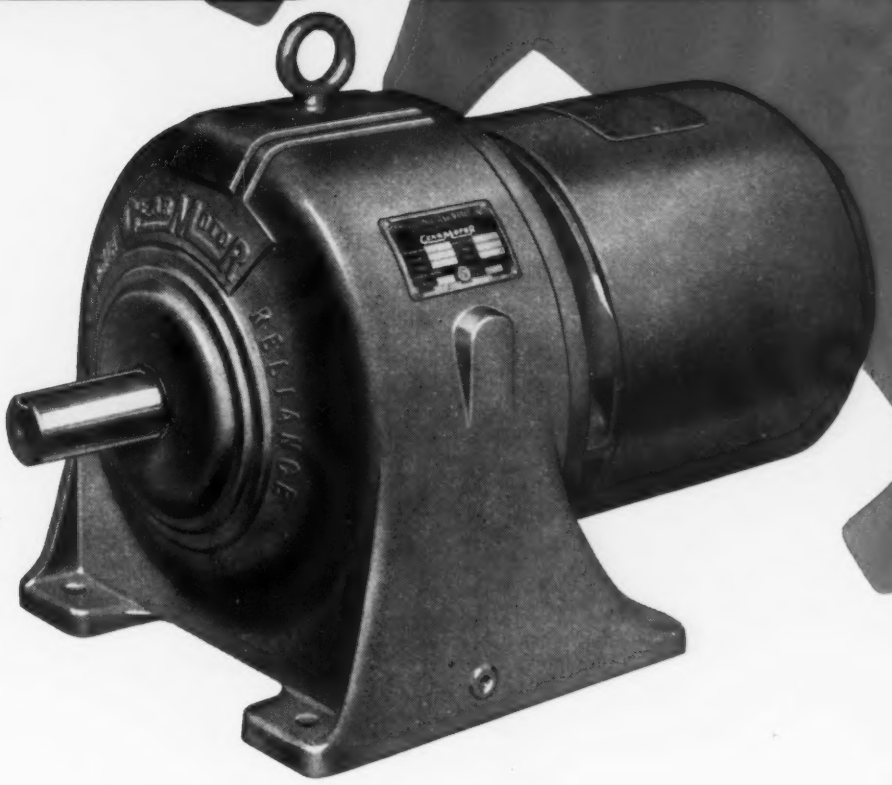
PHILADELPHIA–RELIANCE GEARMOTOR

PHILADELPHIA RELIANCE



Now, after years of design, development and testing, the team of Philadelphia Gear Works and Reliance Electric — a famous gear specialist since 1892 and a famous motor specialist since 1905—is proud to announce this new GearMotoR. From the very start, this project has been guided by repeated checks of all the essentials regarded by industry as desirable in a gearmotor.

Wherever the use of a gearmotor to reduce operating speed is practical, there are advantages in this new Philadelphia-Reliance GearMotoR which are vitally important to your operations. That is why it will pay you to write today for complete details.

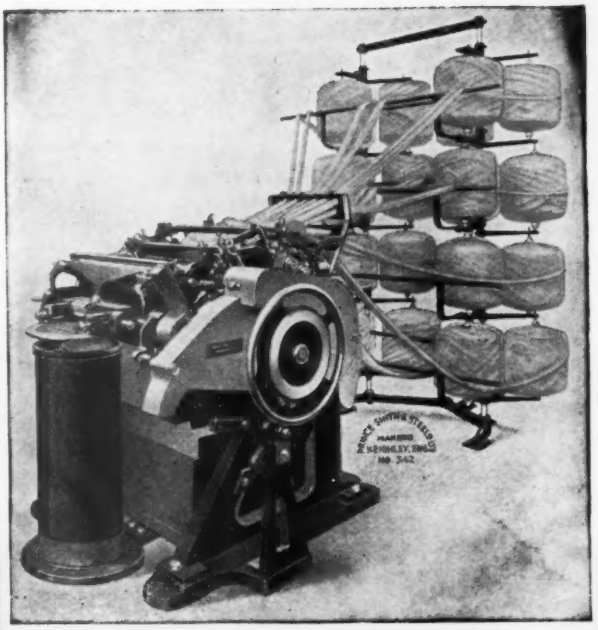
RELIANCE ELECTRIC AND ENGINEERING CO.

1086 IVANHOE ROAD • CLEVELAND 10, OHIO

PLANTS—CLEVELAND and ASHTABULA, OHIO...SALES OFFICES IN PRINCIPAL CITIES

★ *High Production*
★ *Ease of accessibility and setting*
★ *Rigid construction*

features of



RECTILINEAR COMB WIDE MODEL

THE *rectilinear* OR FRENCH COMB

for wool and other fibres

FOR ALL YOUR MACHINERY REQUIREMENTS IN

worsted

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Painting costs just as much the conventional way, so why not try the *profitable* scientific way, employing white and colors functionally, according to a complete set of illustrated prescriptions tailor-made for your plant by Glidden experts? This Glidden Color Service, now offered you without charge, is America's *first and finest* with a record of successful results covering 18 years. It can help you step up production by improving seeing conditions, promoting safety, building morale. And when your prescriptions are carried out in Glidden SPRAY-DAY-LITE, you can depend on America's largest-selling interior maintenance paint for the smartest-looking, longest-lasting one-coat finish attainable. Coupon below will bring you more facts on this winning Glidden combination for profitable painting. Mail it today!

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IDEAL PROCESSING WEATHER

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AMCO EVAPORATIVE COOLING AT PONEMAH IMPROVES YARN STRENGTH — AIDS SPINNING

Part and parcel of Ponemah's reputation for fine count cottons and rayons are the continuous efforts made to assure fabric superiority. An important recent step was the introduction of AMCO Evaporative Cooling.

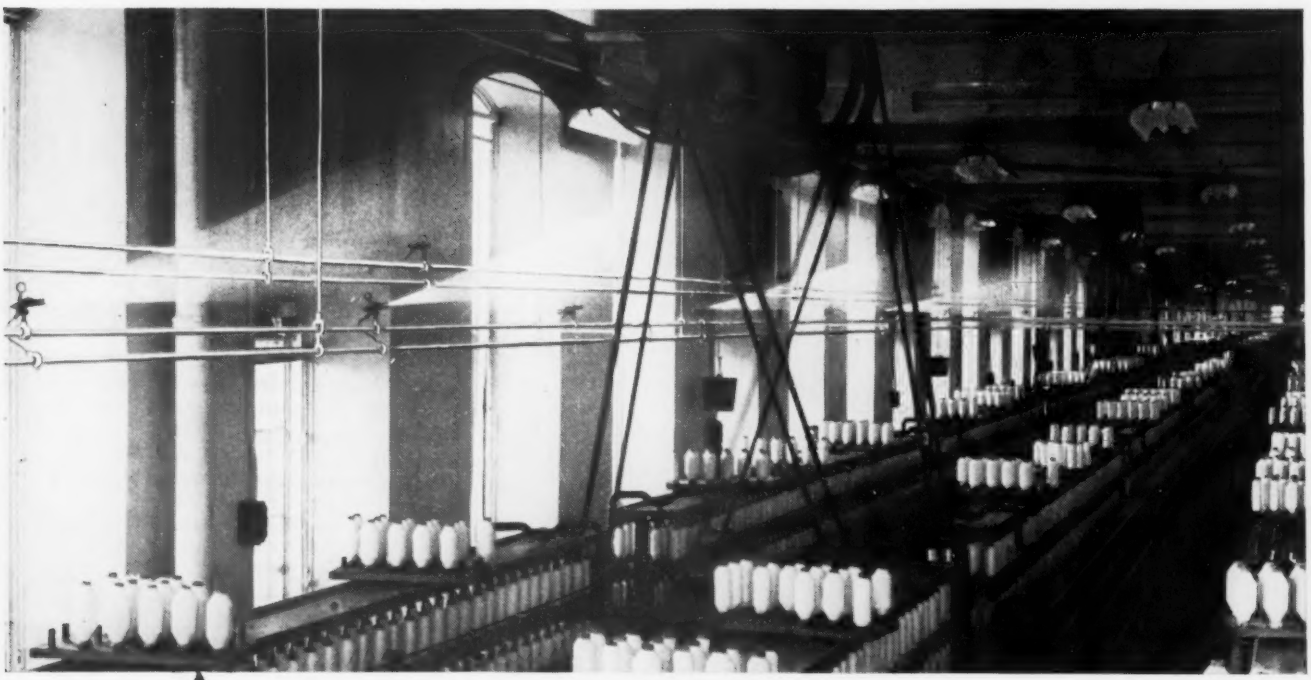
Ponemah already had humidification. The addition of AMCO Evaporative Cooling has proved a low-cost, practical way of meeting the excessive heat burden imposed by the spinning process. The results have been greater yarn strength, more efficient spinning, improved worker comfort.

AMCO Evaporative Cooling utilizes the humidification system to absorb the frictional heat of high speed machines in conjunction with carefully controlled airflow. No ducts or expensive alterations are needed. Installation can normally be made without serious interference with production.

Right now — see for yourself how quickly this system pays for itself with greater production, lower costs. An AMCO engineer will be glad to make a survey and submit recommendations for the exact system to meet the particular conditions and needs of your mill.

FEATURES OF AMCO HUMIDIFICATION AND COOLING

- ★ Reduces excessive temperature and holds relative humidity at point best suited to fibre and process.
- ★ Speeds production in high friction (heat) areas.
- ★ Assures evener yarn counts and increases breaking strength.
- ★ Gradually increases regain for good roving and consequent better spinning.
- ★ Drafting of fibres smoother and more compact.
- ★ Waste and fly greatly reduced.
- ★ No cumbersome ducts to require cleaning and obstruct light.
- ★ Easier to install — minimum disruption.
- ★ High flexibility to meet changing room conditions.
- ★ Minimum maintenance.
- ★ Amco Evaporative Cooling utilizes your present humidification system.
- ★ Increases worker comfort.



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More Than 16 Ounces

in a Pint Can

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Many manufacturers have . . . especially when the can held a development sample of Flintkote Liquid Products.

They've often found the welcome answer to a troublesome requirement for coating, laminating, saturating, bonding or other fabrication problem.

We, at Flintkote, make a broad line of liquid asphalt, resin and rubber products . . . both in aqueous dispersions and in solvent form. In addition to standard products, we've helped meet many special requirements that called for custom-made materials.

As a result, Flintkote Liquid Products find wide use in many branches of industry. Some are used for rug and carpet backing, others as paper and textile laminants and sizings, curled hair binders, or adhesives.

Chances are, in our standard line . . . or in our research files . . . there's a solution to *your* problem. If not, our technical staff will be glad to work with you, to discover what you need.

A letter outlining your problem will put our complete research, development and manufacturing facilities at your disposal.

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Cost Control Through Time Recording

Accurate cost accounting begins with accurate *time* accounting. IBM Job Cost Recorders give you that accuracy—to the minute. On these Recorders, workmen record, instantly and indelibly, the starting and stopping time for each job.

Daily job records made on an IBM Recorder quickly indicate productive and non-productive time. They are an important factor in determining prices, and give management the direct labor time figures needed to compile costs on every job.

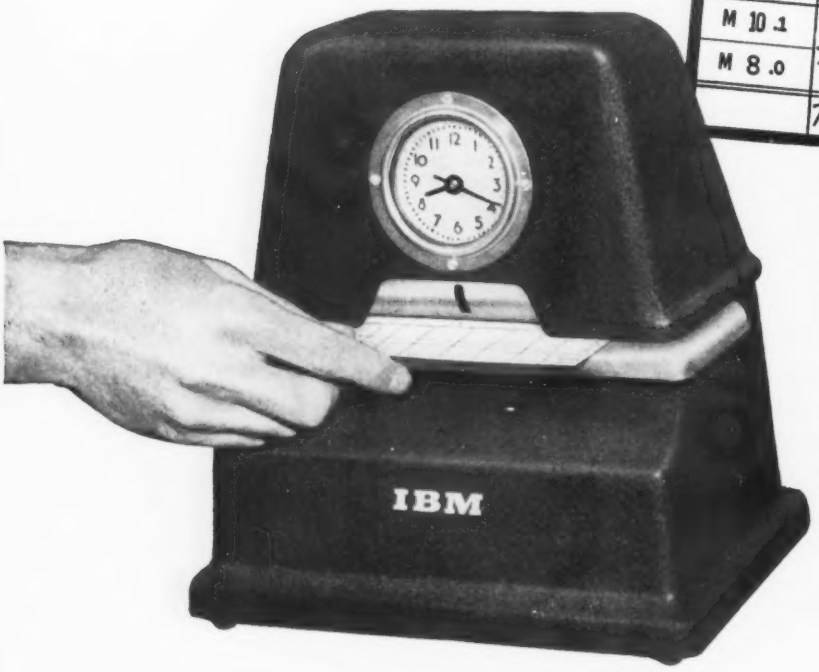
An IBM representative will be glad to show you the many advantages of IBM Job Cost Recording systems.

DAILY COST CARD

Form No. 170012

No. 46 NAME George Bradley

CLOCK	LAPSED TIME	OPERATION & ORDER NO.		NO. PIECES	RATE PER C	AM'T EARNED
			OFF			
			ON			
			OFF			
			ON			
M 4 .9	.9	3799	OFF	150	.86	1.29
M 4 .0			ON			
M 4 .0	.7	3796	OFF	75	1.06	.79
M 3 .3			ON			
M 3 .3	1.8	3784	OFF	200	1.31	2.62
M 1 .5			ON			
M 12 .5	1.4	3772	OFF	150	1.23	3.07
M 10 .1			ON			
M 10 .1	.1	3761	OFF	50	4.82	2.41
M 8 .0			ON			
	7.9					10.18



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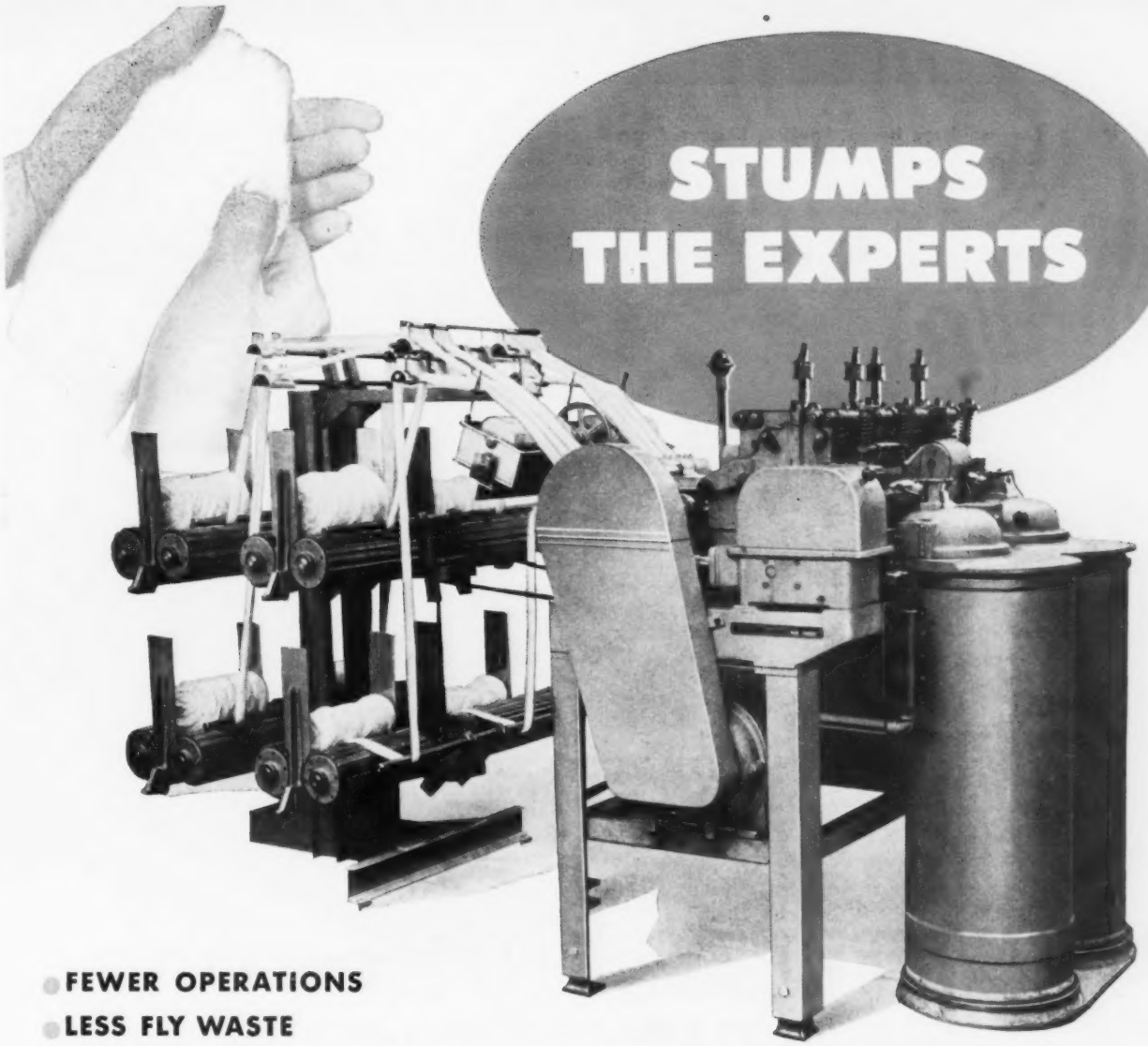
International Business Machines Corporation, World Headquarters Building, 590 Madison Avenue, New York 22, N. Y.



STUMPS THE EXPERTS

- FEWER OPERATIONS
- LESS FLY WASTE
- EVENER SLIVER
- FASTER PRODUCTION
- BETTER CLOTH

with the WARNER & SWASEY PIN DRAFTER

Trade Mark

EXPERIENCED production men in the worsted industry can usually hit the nail right on the head when it comes to identifying the grade stock being worked by just closely inspecting the sliver.

But don't bet on it, when the sliver comes off the new Warner & Swasey Pin Drafter—the better sliver produced by this improved method of pin control may fool you.

Yes, it's hard for the industry to believe how the installation of these new machines can result in such better yarn and fabrics while reducing costs. We urge that you learn the facts.

You can do it Better. Faster. for Less....
with a Warner & Swasey

Send for Bulletin—
Mail This Coupon Today

WARNER & SWASEY
Cleveland
TEXTILE MACHINERY DIVISION

THE WARNER & SWASEY CO.
Textile Machinery Division, 5701 Carnegie Avenue
Cleveland 3, Ohio

Yes, I would appreciate additional information about the Warner & Swasey Pin Drafter.

Name ..... *Title* .....

Company .....

Address .....

City ..... *Zone* ..... *State* .....

D-548

The two large bronze travelers illustrated actual size each weigh 600 grains and are used for twisting sash cord and heavy twine. No. 12 and No. 16 bronze twister travelers are shown for comparison. These "heavy weights" are the biggest in Victor's line of some 15,000 sizes and styles for every spinning and twisting need.

ARE TRAVELERS THE *Biggest* THINGS *in your yarn production setup?*

ACTUALLY, they are about the smallest piece of equipment you use in fiber processing. But they *can* be one of the biggest, in point of time and production lost, if you choose the wrong traveler. A little traveler can become your biggest headache.

With the new interest in worsted yarns prepared on the cotton system, and with so many new synthetics and blends coming up for processing, it is more difficult today than ever to be sure the traveler you use is right for the job. Experience with conventional fibers helps. But, to save precious time in setting up smooth-running spinning and twisting, you need up-to-the-minute information.

You can get that kind of information from a man whose job it is to keep abreast of every new development. The Victor Service Engineer is fully prepared to help you keep out of traveler trouble, and, more than that, help you raise production and quality, often well above what you expected.

Make sure you are getting the most and the best from your frames, whether you are running blends, straight synthetics, or conventional fibers. Write, wire or phone, and a Victor Service Engineer will call promptly.

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VICTOR Ring Travelers

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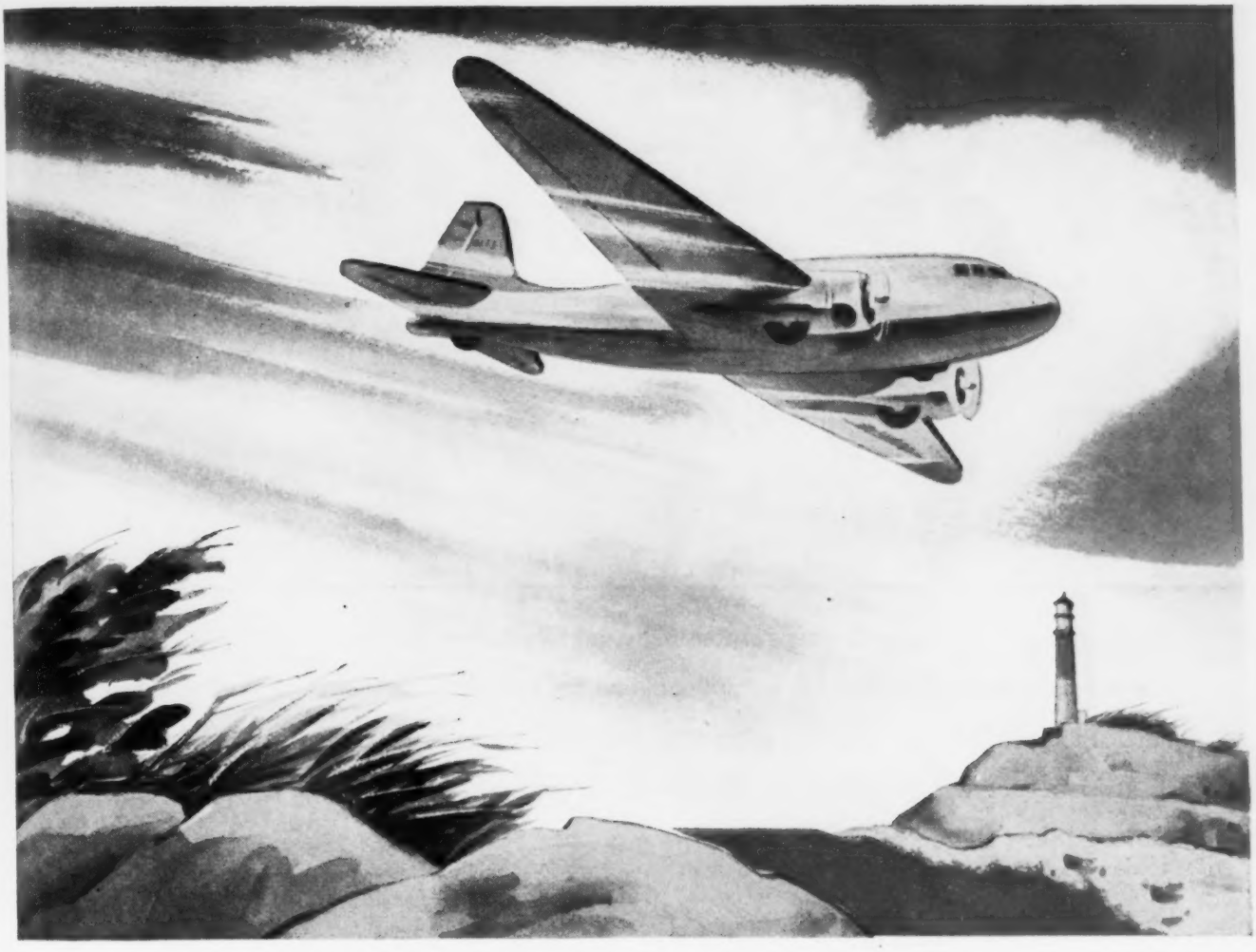


Flying with a tail wind

Planes take off in almost any kind of weather these days—but every pilot welcomes good flying conditions and a tail wind. That's what makes it easy to fly on or ahead of schedule.

In the same way, bleachers and dyers prize a de-sizing agent that gets the job done on time—makes finishing operations easy—overcomes snags and helps avoid "problem lots."

Take Type L—for instance: here's a Diastafor brand de-sizing agent that is "tops" for easy, economical, trouble-free operation. Yard after yard, you get a fine "hand" in your finished goods. You're "flying with a tail wind" all the time when you use Diastafor.

Diastafor—Type L—has been especially developed to work in a wide range of temperatures and pH. Over and over again it has proved itself on the most difficult de-sizing jobs, giving the same uniformly good results.

Whether you are working with cottons, rayons, or mixed goods—you can depend on Diastafor to give a good finish—no impairment of tensile strength, no streaky or uneven dyeing.

In addition to Type L, Diastafor is available in several other types, to meet any de-sizing problem. If you would like to know more about Diastafor, the favorite de-sizing agent for 40 years, we shall be glad to send you full information and prices. Just write Standard Brands Incorporated, *Diastafor Department*, 595 Madison Avenue, New York 22, New York.

DIASTAFOR

A TRADE MARK OF STANDARD BRANDS INCORPORATED

Olate BRINGS OUT THE BEST IN YOUR SYNTHETICS

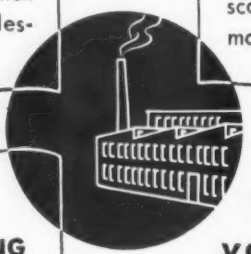
● If synthetic processing is your responsibility, let Olate shoulder part of the load. Olate has a time-tested reputation for exceptional wetting out, detergent and lubricating qualities. This pure, neutral, low titer soap is widely used throughout the industry because of its efficiency, economy, and safety. No other soap can do more to help you turn out quality yarns, hosiery, knitted fabrics or woven piece goods.

FOR YARN FINISHING

You get thorough scouring with Olate . . . rinsing is fast and complete . . . protection against oxidation, rancidity, and odor development is exceptional. Olate-scoured yarns give fabrics the pleasing finish which means so much to the eye-appeal and sales-appeal of the finished product.

FOR HOSIERY SCOURING AND DYEING

Cleansing action starts the minute Olate's fluid solutions penetrate the hosiery. Wetting out is fast and thorough. You get unusual freedom from uneven dyeing with Olate scouring. And Olate costs you far less than most proprietary scouring oils.



FOR SCOURING AND DYEING WOVEN PIECE GOODS AND KNITTED FABRICS

Olate provides exceptional freedom from these common trouble makers—uneven shrinkage, streaks, dye blotches, and chafe marks—because of its rapid wetting out, gentle cleansing action, and excellent lubricating properties. Olate can do much to guard against costly, wasteful tie-ups and rejects.

there's a place in your plant where Olate can help . . . try it!

Olate

Safe and efficient for every soap usage.

● PROCTER & GAMBLE ●

24 YEARS

-for a cent a day

Day in and out, for twenty-four years this Sarco TR-21 Temperature Regulator has controlled the temperature on this large hot water tank in a Cleveland plastics plant.

Because the water for washing and processes has always been "ready to use", oceans of water have been saved during this period. Since the temperature was never too high, car loads of coal were never burned. And in the plant the water for every process was just right, saving thousands of dollars in rejects and building up a life time reputation for the consistent quality of this company's products.

And all this for less than a cent a day — for that is the original cost of the Sarco Control divided by its many days of faithful service. Many Sarco Controls are so inexpensive and effective that their cost is paid for in savings in a few months.

Other Sarco Controls for room temperatures, processes, cooling water and refrigerants are also available.

This Sarco Control operates steam, water, brine and gas valves ½ to 8 in. Entirely self-contained and self-operated. No electricity, compressed air, etc., needed. Easy to install. For any temperature between 0 and 300° F. Write for Catalog No. 600.

180

SARCO SAVES STEAM

SARCO COMPANY, INC.

Represented in Principal Cities

Empire State Building, New York 1, N. Y.

SARCO CANADA, LTD., TORONTO 5, ONTARIO

BEAM AND PACKAGE PORT TYPE DRYER

After extraction, beams or yarn carriers are placed on this Smith-Drum Port Type Dryer which forces heated air through the yarn from the inside-out.

4 to 1

★ . . In the SAME machine

★ . . At the SAME time

★ . . Under the SAME conditions

★ . . With the SAME liquor ratio

. . . and with Absolutely Uniform Results

The Smith-Drum "Cloverleaf" Combination Beam and Package Dyeing Machine will dye as many as one, two, three or four beams or yarn carriers under identical conditions. This assures absolute uniformity in dyeing, because each beam or yarn carrier is processed under the same pressure, the same temperature, the same flow and with uniform distribution of additions to the dye bath. When dyeing less than a full load, a dummy is used to automatically maintain the same pressure, flow and liquor ratio as when dyeing a full load. The machine is also equipped with a valve to permit extraction with air before the yarn is removed from the dye tank.

This machine is built in three sizes to accomodate a total of two, three or four beams or yarn carriers. Stainless steel beams and special package carriers for use with this machine are also built by Smith, Drum & Company.

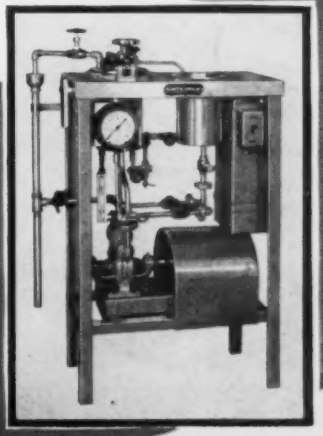
Other Smith-Drum auxiliary equipment used in preparing the yarn for dyeing and for drying after dyeing and extracting is illustrated and described below. *Write for Bulletin PB801 giving complete information.*

SMITH, DRUM & COMPANY
Allegheny Ave. at 5th Street
Philadelphia 33, Pa.

SMITH-DRUM

PACKAGE FORMING PRESS

This machine properly prepares package for dyeing by crimping the edges of the package to aid penetration of the dye liquor at that point.



SAMPLE PACKAGE DYEING MACHINE

This machine dyes a single package under the same conditions and control as the large machines. It is used extensively in determining formulae and for sample work.

TEXTILE PROCESSORS, using GAS as a production-line fuel for drying, singeing, curing, and other heat-processing operations, report outstanding successes in cost reduction, increased capacity, improved fabrics. These statements, from various textile manufacturers and finishers, emphasize the importance of GAS and modern Gas Equipment in textile productioneering.

INCREASED PRODUCTION

The production and finishing of piece goods was increased more than 100% and the record maintained over two-year test period with GAS and Modern Gas Equipment.—New Jersey Dyer and Finisher

IMPROVED TEXTILES

Processing with GAS improves the fabric because the rapid drying in slashers prevents flattening of the yarn; in dyeing the color fastness is assured.—Eastern Mill Executive

CONTROLLED PROCESSING

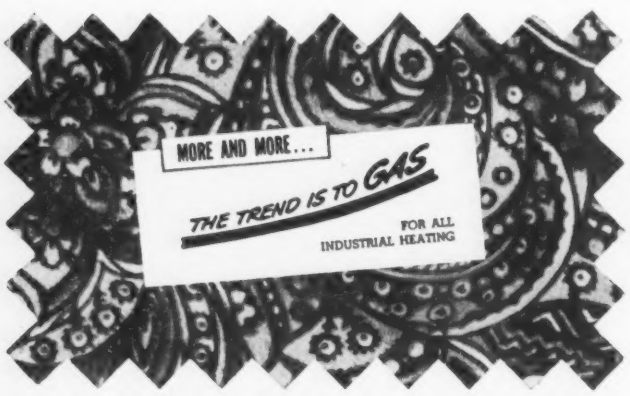
GAS is so flexible and so readily controlled that simple automatic devices maintain the proper temperature with less than 5° variation for curing ovens and print towers for processing all types of fabrics.—New York State Textile Company

OPERATING ECONOMY

Increase of 25% in operating speeds on tenter-palmer unit, plus savings in steam and labor costs, amortized the cost of Modern Gas Equipment.—Synthetic Fabric Producer, Virginia

THOROUGH DRYING

GAS acts rapidly and thoroughly, drying at production speeds without weakening the fabric by scorching. The combination of accurately controlled GAS and variable-speed equipment facilitates processing of all weights of cloth.—New Jersey Processor



You'll want complete details on modern Gas Equipment for your modernization and production planning and that's when your local Gas Company Representative can be of real assistance.

AMERICAN GAS ASSOCIATION
420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

THE TORRINGTON COMPANY
Torrington, Conn., U. S. A. Est. 1866
Branches: New York, Philadelphia, Chicago, Greensboro, N. C., Boston, St. Louis, Toronto, Canada. *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, Calif. *In England:* Broadgate House, 7-10, Eldon Street, London E.C.2

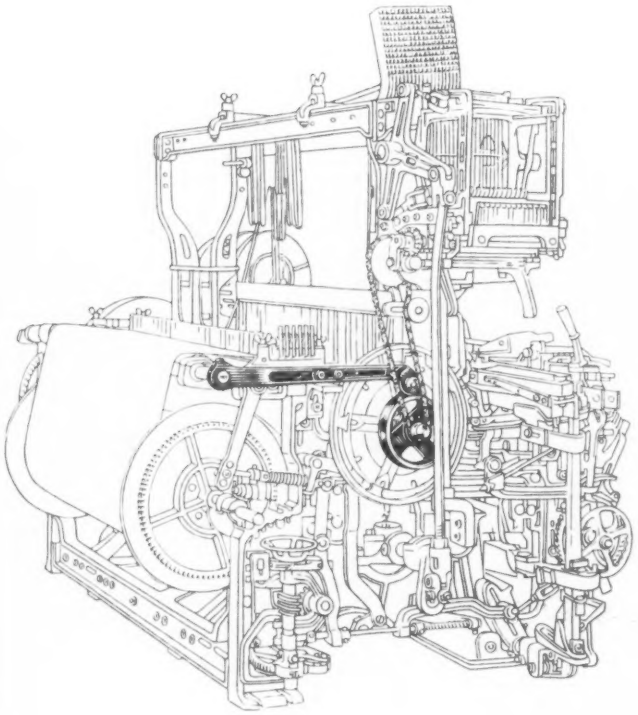
TO KNIT THE BEST

Use

THE BEST

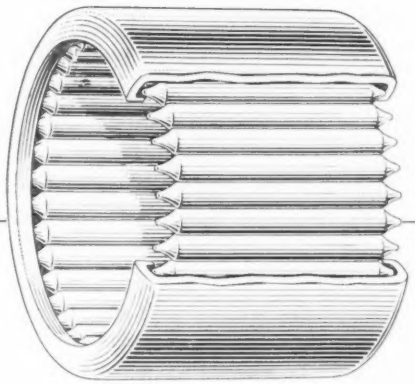
There's a **TORRINGTON** Needle

for every type of Knitting!



Torrington Needle Bearings on Draper High-Speed Looms

Draper Model XD High-Speed Rayon Loom shows location of Whip Roll Cam Follower where use of a Torrington Needle Bearing has served to reduce friction, extend service life, and minimize maintenance attention in this important application.



Ten-year record of Needle Bearings on whip roll cam followers shows improved service life with reduced maintenance attention.

On both Model XD High-Speed Rayon Loom and Model XP High-Speed Loom for weaving heavy cotton fabrics, Torrington Needle Bearings used in the whip roll cam follower have established an enviable service record since they were first adopted for this application nearly ten years ago.

In these looms, which normally operate at speeds up to 192 picks per minute, cam rollers are constantly operating at speeds of 500 to 600 rpm. Yet, periodic attention to insure correct lubrication is the only service or maintenance attention necessary and the former need for periodic replacement of worn cam follower parts has been eliminated.

The long service life, ease of anti-friction operation which contributes to lower power requirements, and freedom from maintenance are typical of the advantages to be secured through the use of Torrington Needle Bearings in many textile machinery applications. Our engineering department will gladly work with you in adopting these modern anti-friction bearings to your equipment.

THE TORRINGTON COMPANY

Torrington, Conn. · *South Bend 21, Ind.*

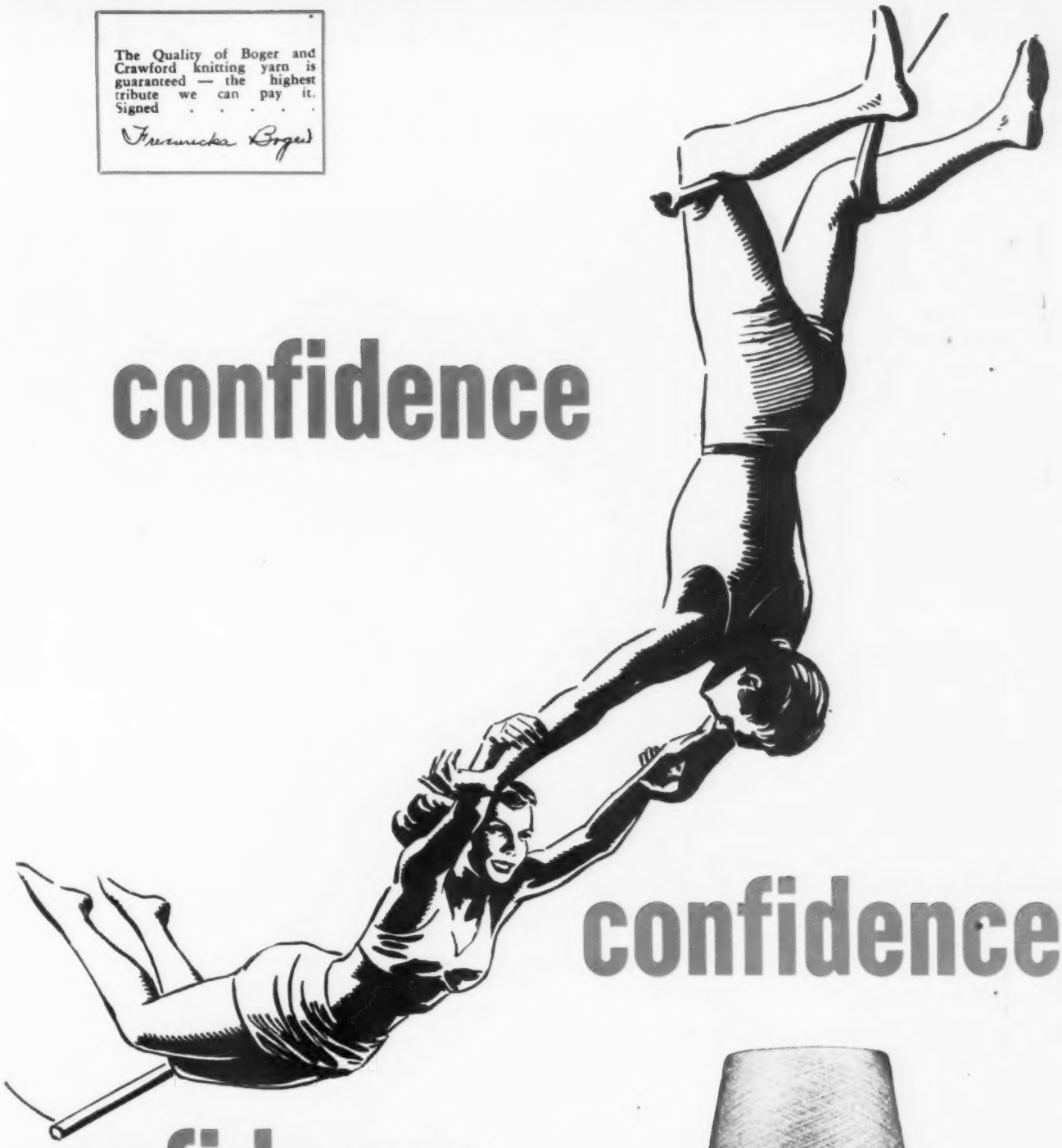
District Offices and Distributors in Principal Cities

TORRINGTON *NEEDLE* **BEARINGS**

NEEDLE · SPHERICAL ROLLER · STRAIGHT ROLLER · TAPERED ROLLER · BALL · NEEDLE ROLLERS

The Quality of Boger and Crawford knitting yarn is guaranteed — the highest tribute we can pay it.
Signed . . . . .
Frances Boger

confidence



confidence

confidence

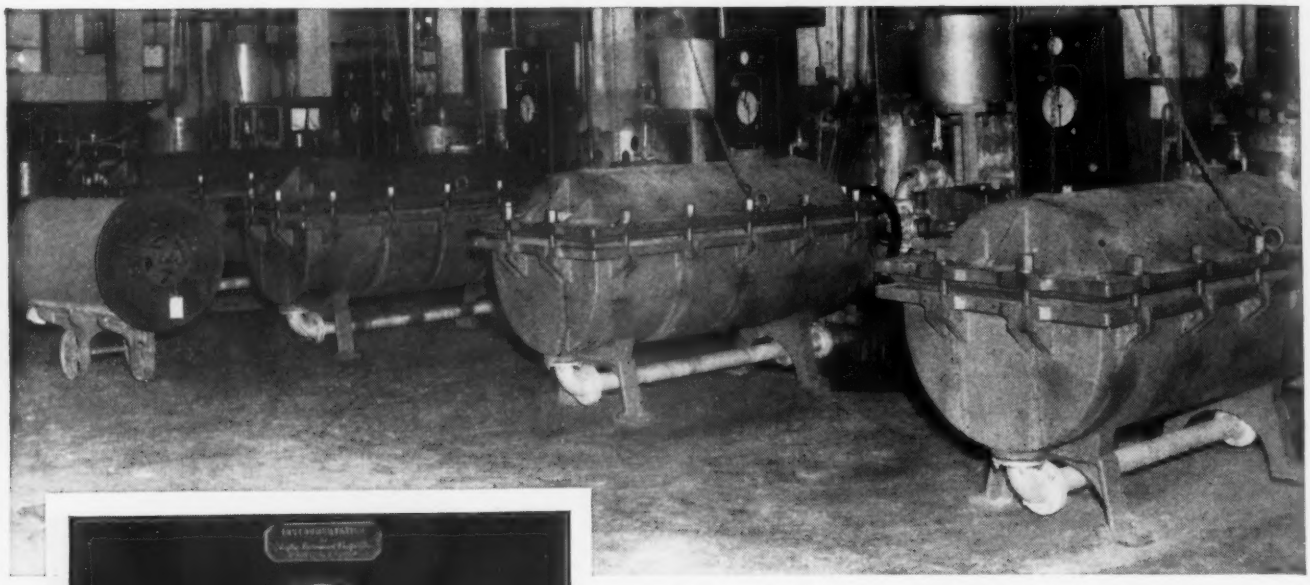
. . . A proven characteristic of Boger and Crawford. Our high Quality yarns and forthright business dealings for over forty years warrants the confidence a growing majority in the knitting industry manifests for our yarn. Let us help YOU make your product one of merit.

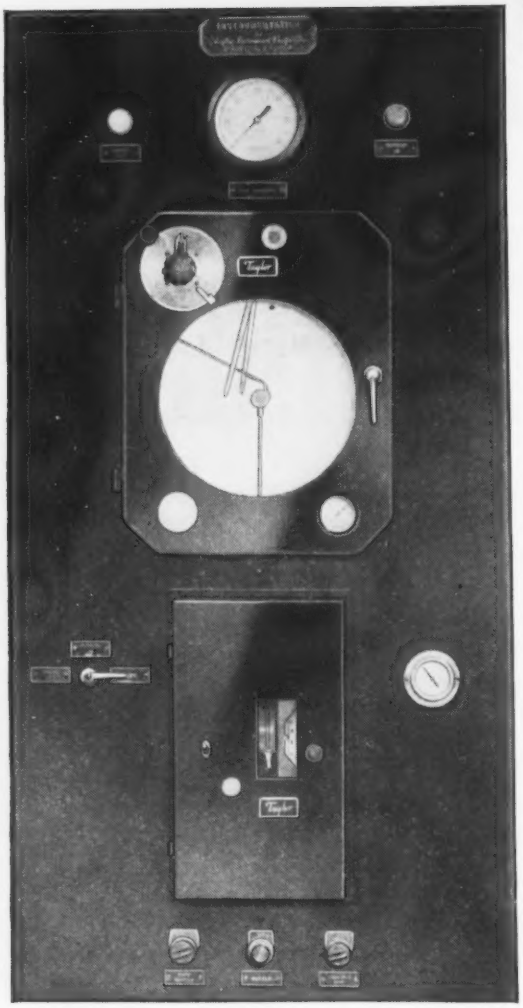
BOGER & CRAWFORD

MERCERIZED YARNS

PHILADELPHIA, PA. • UTICA, N. Y. • BOGER CITY, N. C. • BOSTON, MASS. • CLEVELAND, OHIO

Taylor's on the "BEAM" in this Big Southern Cotton Mill!





STRICTLY top efficiency here! This battery of Taylor-equipped beam dyeing machines not only operates automatically—at minimum cost—but delivers more uniformly high quality than was ever possible with hand control. Instruments, mounted on a Taylor coordinated panel (insert) control each machine. The instrument equipment consists of:

1. A Fulscope Controller with Process Timer for automatic control of temperature and the time of the overall dyeing cycle.

2. A Flex-O-Timer which operates the dye liquor reversing valve, giving a specific inside-out and outside-in cycle. It precisely times flow reversal, thus assuring greater uniformity.

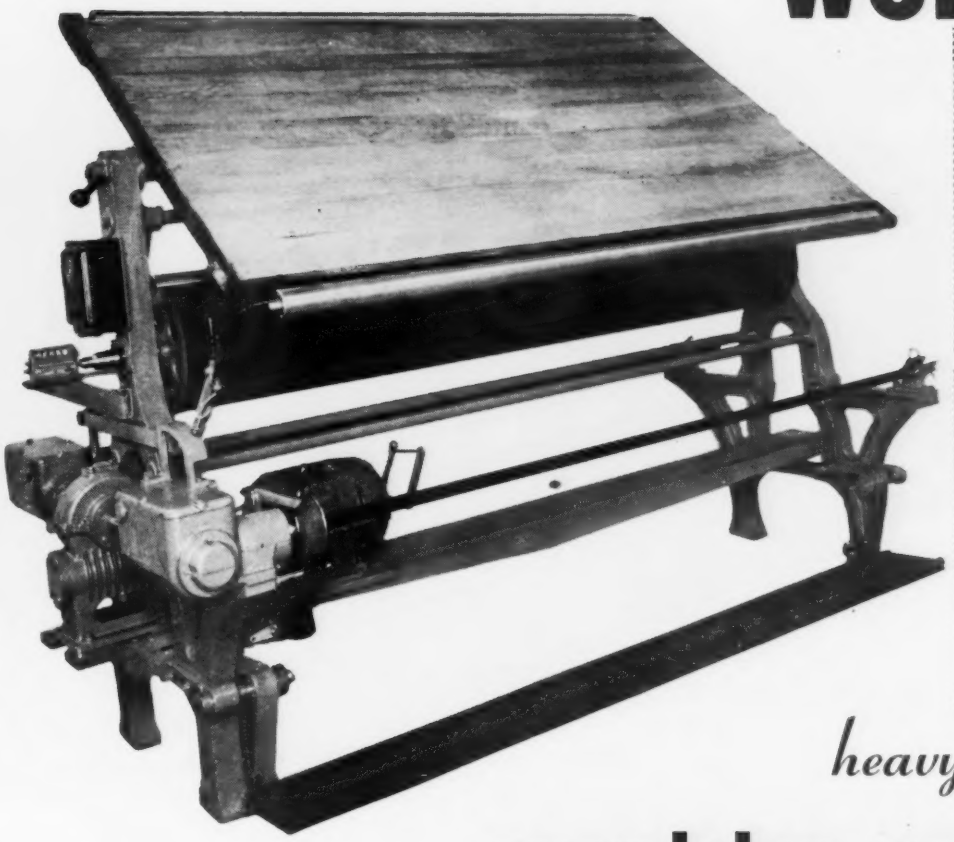
3. Signal Lights which let the operator see at a glance just what part of the cycle he's in. They also let him know the direction of flow at any time.

This beam dye control system is only one of many ways you can "beat rising costs with Taylor Accuracy." Whatever dyeing problems you have, we can help you solve them by working out an efficient Taylor Automatic Control System for you. Ask your Taylor Field Engineer! Or write Taylor Instrument Companies, Rochester, N. Y., or Toronto, Canada. *Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.*

TAYLOR INSTRUMENTS MEAN *ACCURACY FIRST*

engineered by

werner



heavy duty

examining machine....

EASY TO OPERATE . . . WITH 6 GOOD FEATURES!

Werner's Examining Machine is made for heavy-duty operation. At least 6 features make it do an outstanding job.

STRONG. Solid cast iron frame, which supports the tilting examining table made of mahogany veneer plywood and held in an angle frame.

EASE OF OPERATION. Cloth to be examined travels over the machine from shell to shell, guided by four ball bearing brass rolls.

STOP-START. Operator can instantly start and stop the motor by releasing or stepping on footboard running the entire width of the machine.

VARIABLE SPEED. Machine is driven by a ¾ h.p. A.C. motor, with infinitely variable speed obtained through a hydraulic drive unit.

REVERSIBLE ACTION. Shifter lever is provided to conveniently reverse direction of travel of the cloth.

HYDRAULIC DRIVE UNIT. This transmission permits operation with a minimum of tension, desirous especially for fabrics such as spun rayon.

Werner's Examining Machine is a *must* in the Textile Industry. Write us today for full details on Werner Equipment.

WERNER EQUIPMENT

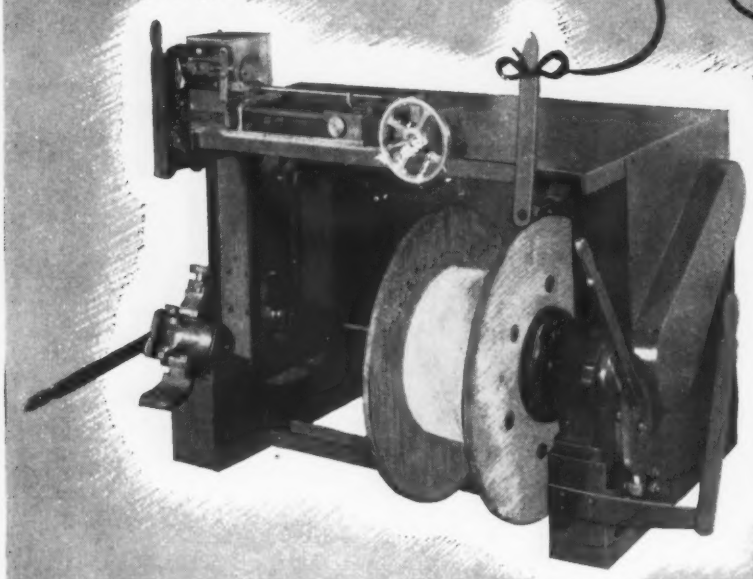
- Beamer
- Decater
- Dry Cans
- Examining Machine
- Flock-Printing-Range
- Jig
- Open Width Boil-Off
- Padder (2 and 3 Roll)
- Palmer Tenter Quetch Range
- Pile Fabric Finishing Range
- Quetch
- Rubbing Machine
- Rope Washers
- Stainless Steel Dye Kettle
- Single-Color-Roller Print Machine
- Tuber
- Tenter Frame
- Vacuum Extractor

WERNER MACHINE COMPANY, INC.

PHONE, PASSAIC 3-3110

PASSAIC, NEW JERSEY

talk about takeups...



IOI's newest constant tension continuous extrusion takeup for plastic or rubber

These features speak for themselves!

- Demountable alloy reel shaft and lever operated tilting base simplify reel loading and unloading
- Unloads reels direct to floor with no possibility of damaging flanges on even heaviest reels
- Shifts automatically or manually from full to empty reel without interrupting the winding process
- Hydraulic reel synchronizer effects continuous precision control of reel speed in proportion to winding diameter
- Uses either hydraulic or pneumatic constant tension reel drive
- Traverse and crossover are stroke and lay adjustable through a wide lay range
- Wide operating speed range available, up to 2,000 FPM or higher
- Adaptable to any type of tuber drive—hydraulic, mechanical, electrical or electronic.

Heat at Work...in CONTINUOUS OPERATIONS

For complete information on this machine as well as other IOI developments in continuous extrusion takeup equipment write for "Blueprint for Industry," Part IV. It's free for the asking.

INDUSTRIAL OVENS, INC.

IOI ENGINEERING VERSATILITY

13825 TRISKETT ROAD CLEVELAND 11, OHIO

ASSOCIATED COMPANY: JAMES DAY MACHINERY LTD., LONDON W.1, ENGLAND

SAVE SOAP—SAVE MONEY

WITH

YARMOR

HERCULES PINE OIL

In wet processing of cotton, wool, silk, or rayon, Hercules Yarmor* enhances the detergent action of soap . . . penetrates deeper . . . wets out thoroughly . . . and rinses clean.

This pure, steam-distilled pine oil is an excellent solvent for waxes and oils . . . an excellent dispersant for dyes.

It will pay you to investigate Yarmor Pine Oils. For technical details, request the services of an experienced Hercules service man, or ask your supplier of textile chemicals. Mail coupon for the book, "Hercules Pine Oils in the Textile Industry."

WETS AND PENETRATES

REMOVES DIRT AND GREASE

RINSES CLEAN

HERCULES

*REG. U. S. PAT. OFF.

HERCULES POWDER COMPANY
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Send free book, "Hercules Pine Oils in the Textile Industry."

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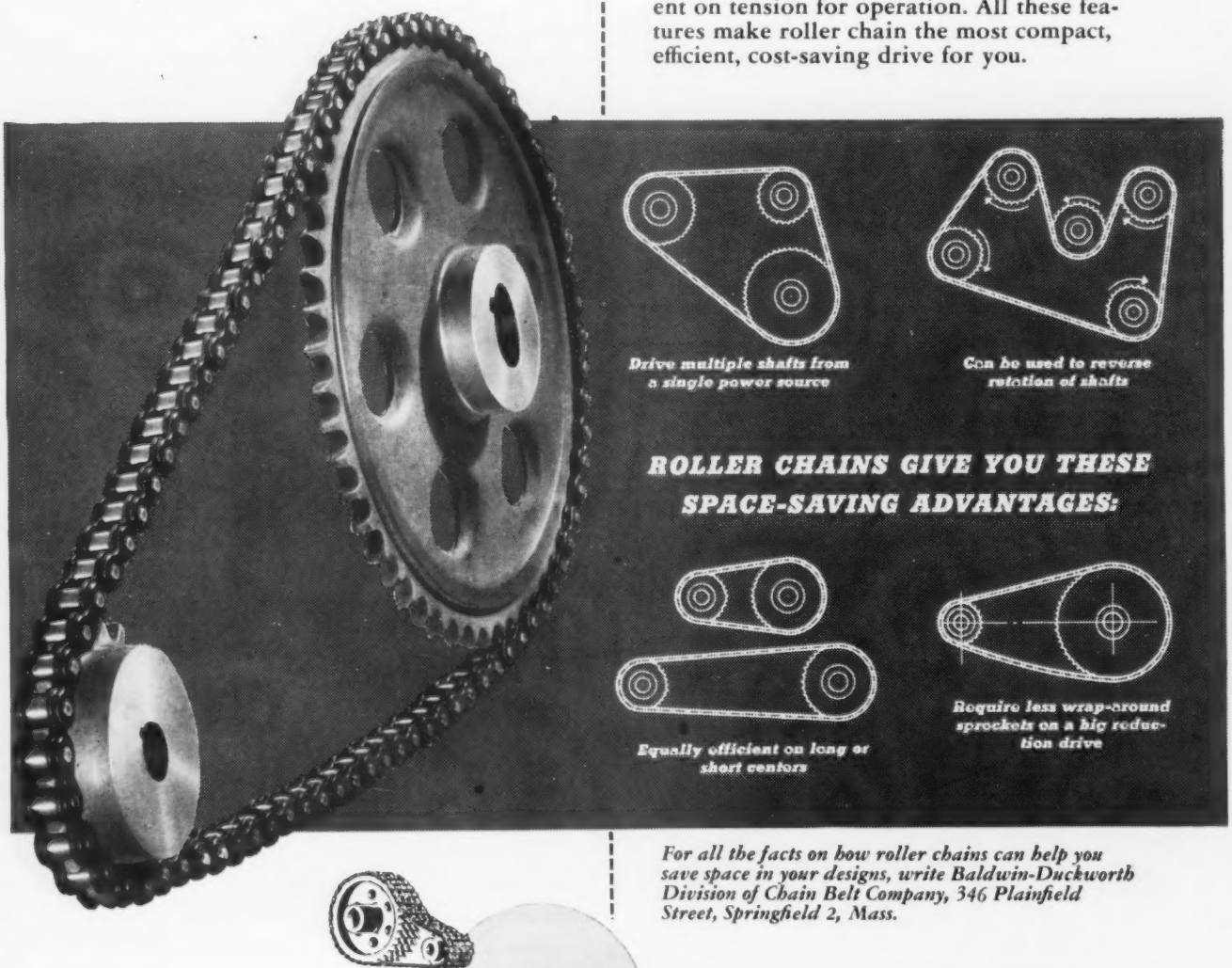
WYB-2

You can save space... add flexibility... with roller chain

With the present trend toward compactness in design, the outstanding advantages of roller chain become more important than ever to the machine designer. With roller chains, you can:

Save Space. Regardless of load conditions or speeds, roller chains require less width to effectively transmit power. Since they are not dependent on tension for effective operation, sprocket size can be held to the minimum, particularly on drives where there is a considerable reduction in speed ratios.

Add Flexibility. Since roller chains can be flexed in either direction, they can be used to reverse direction of shaft rotation. They can drive multiple shafts from a single power source. Shafts can be located vertically, horizontally or at any angle. Center distance can be short or long. No additional strength need be built into shafts and bearings as is often required by the extra load imposed on these parts by a drive dependent on tension for operation. All these features make roller chain the most compact, efficient, cost-saving drive for you.

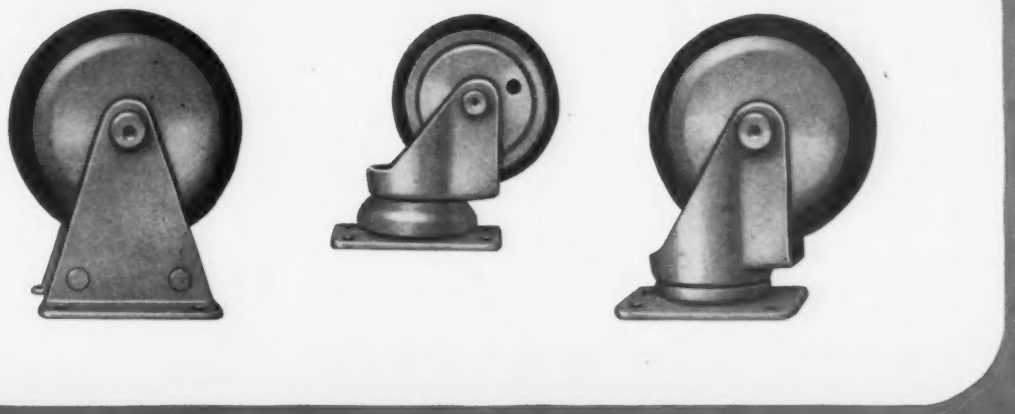

Drive multiple shafts from a single power source
Can be used to reverse rotation of shafts
ROLLER CHAINS GIVE YOU THESE SPACE-SAVING ADVANTAGES:
Equally efficient on long or short centers
Require less wrap-around sprockets on a big reduction drive

For all the facts on how roller chains can help you save space in your designs, write Baldwin-Duckworth Division of Chain Belt Company, 346 Plainfield Street, Springfield 2, Mass.

BALDWIN·REX

ROLLER CHAINS

BALDWIN-DUCKWORTH DIVISION OF CHAIN BELT COMPANY



IT WILL PAY YOU—

to check the casters and wheels on your equipment

You may find that the use of obsolete equipment is reducing efficiency and profits in your mill.

Where your rolling equipment is found wanting, replace with COLSON casters—the quality line that is known throughout the textile industry for service and durability.

COLSON can supply any size or type of caster or wheel—all built to "take it" in textile mills. They roll easily over all floors, swivel freely, and are rust-resistant. A wide range of models can be equipped with thread guards.

The COLSON Corporation also manufactures many types of materials handling equipment—a complete line of hand trucks, platform trucks, box trucks, drum and barrel trucks, and special devices.

When you have a caster or materials handling problem—write us.

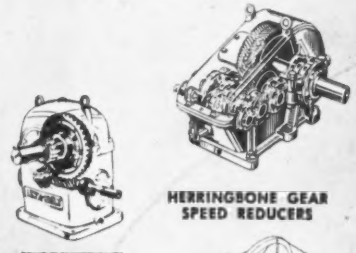
Colson

THE COLSON CORPORATION

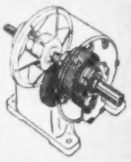
ELYRIA, OHIO

CASTERS • INDUSTRIAL TRUCKS AND PLATFORMS • LIFT JACK SYSTEMS • BICYCLES • CHILDREN'S VEHICLES
WHEEL CHAIRS • WHEEL STRETCHERS • INHALATORS • TRAY TRUCKS • DISH TRUCKS • INSTRUMENT TABLES

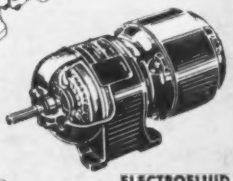
OTHER TYPES OF LINK-BELT POWER TRANSMISSION MACHINERY


HERRINGBONE GEAR SPEED REDUCERS

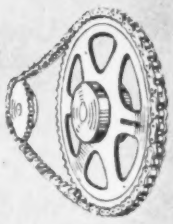
WORM GEAR SPEED REDUCERS

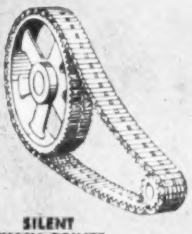

HELICAL GEAR SPEED REDUCERS

GEARMOTORS


ELECTROFLUID DRIVES

P.I.V. GEAR SPEED VARIATORS


SILVERLINK ROLLER CHAIN DRIVES


SILENT CHAIN DRIVES

STEEL AND MALLEABLE CHAIN DRIVES

V-BELT DRIVES

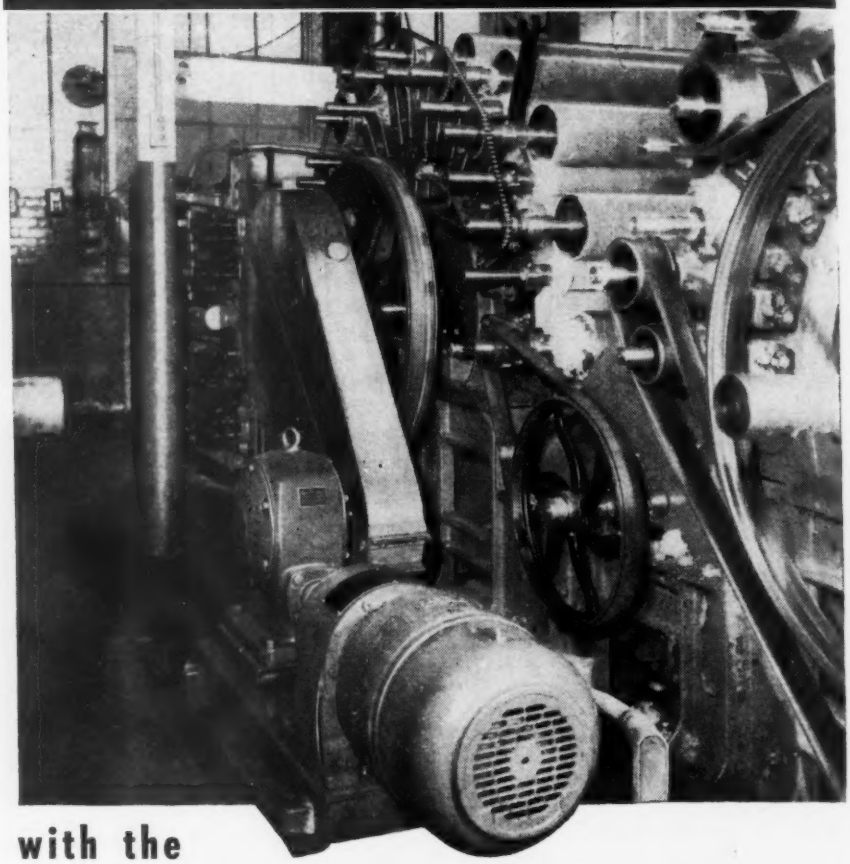
UNMOUNTED BALL AND ROLLER BEARING UNITS

ROLLER BEARING MOUNTED UNITS

BALL BEARING MOUNTED UNITS

BABBITTED BEARINGS

SMOOTH, EASY STARTING at Minimum H.P.



with the

LINK-BELT *Electrofluid* DRIVE

The illustration above shows a 10 H.P. Electrofluid Drive on the second breaker section of a wool carding machine. The high inertia starting load, characteristic of this heavily fly-wheeled unit is picked up smoothly and gradually, without undue strain on the motor and equipment. Excessive starting current is eliminated and shocks which might damage material in process are overcome.

The Electrofluid Drive combines with virtually all types of Link-Belt constant and variable speed reduction gear units and chain drives to afford shock-proof, efficient, economical transmission of power. Send for Book No. 2085-A.

LINK-BELT COMPANY

Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5, San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8.
Offices, Factory Branch Stores and Distributors in Principal Cities.

11,013

LINK-BELT

Power Transmission Machinery

1,000,000

ONE MILLION

Marquette

ROLLER BEARING SPINDLES

NOW IN OPERATION!

The Marquette **METAL PRODUCTS CO.**

CLEVELAND 10, OHIO

SUBSIDIARY OF CURTISS-WRIGHT CORPORATION

Also Manufacturers of: HYDRAULIC GOVERNORS • FUEL OIL PUMPS
WINDSHIELD WIPERS FOR AIRCRAFT, TRUCKS AND BUSES
FUEL OIL INJECTORS • PRECISION PARTS AND ASSEMBLIES

BYRD MILLER, WOODSIDE BLDG., GREENVILLE, S. C. · WILLIAM P. RUSSELL, BOX 778, ATLANTA, GA.

Equipped with 2 cylinders for average work . . . or equipped with 3 cylinders and ball-bearing contact rolls to increase drying surface for heavy work. Heavy copper or stainless steel covered 5' and 7' cylinders insulated. Heavy duty self-aligning anti-friction cylinder bearings . . . self-releasing positive drive.

The new WPF&M Co. COTTON SLASHER

Sure cure for size troubles!

Here's a new, improved, mill-tested Slasher . . . combining many special features and equipment . . . that's designed to correctly size the lightest gauze or the heaviest sheeting at top speed and lowest cost.

Whatever your specific mill requirements and problems, the WPF&M Slasher can be adapted to fit your needs and cure your sizing troubles.

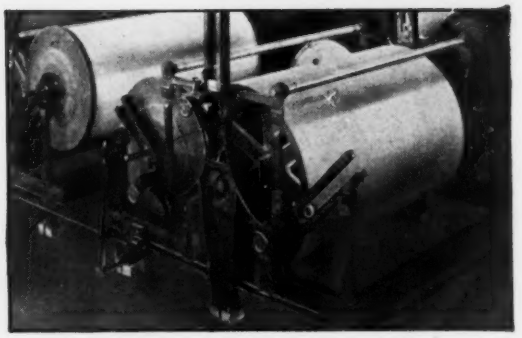
Check the many outstanding features found only in the WPF&M Slasher. Let us show you how modern slashing equipment and methods can increase production, improve quality and reduce cost.

FREE BOOKLET

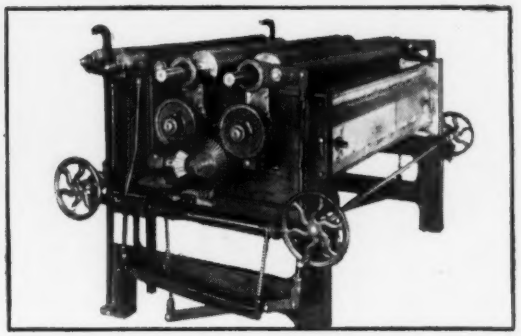
"Cotton Slashers"

Describes the many special features found only in the WPF&M Slasher.

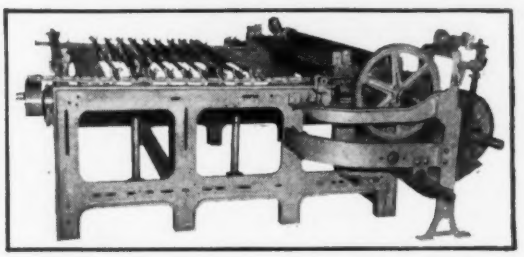
MAY WE SEND YOU A COPY?



WHITE CREEL (above) — positively driven — controls yarn stretch; makes sizing faster, more uniform; smooths starts and stops; eliminates breakage and waste. Also available: standard over-under type creel with continuous side rails or extra-height, close-coupled creel for limited space. All creels ball-bearing equipped.



Stainless steel SIZE BOX with extra deep bronze stuffing boxes. Size rolls mounted on ball-bearing journals. Special squeeze-roll lift eliminates strain . . . keeps squeeze rolls accurately positioned over size rolls.



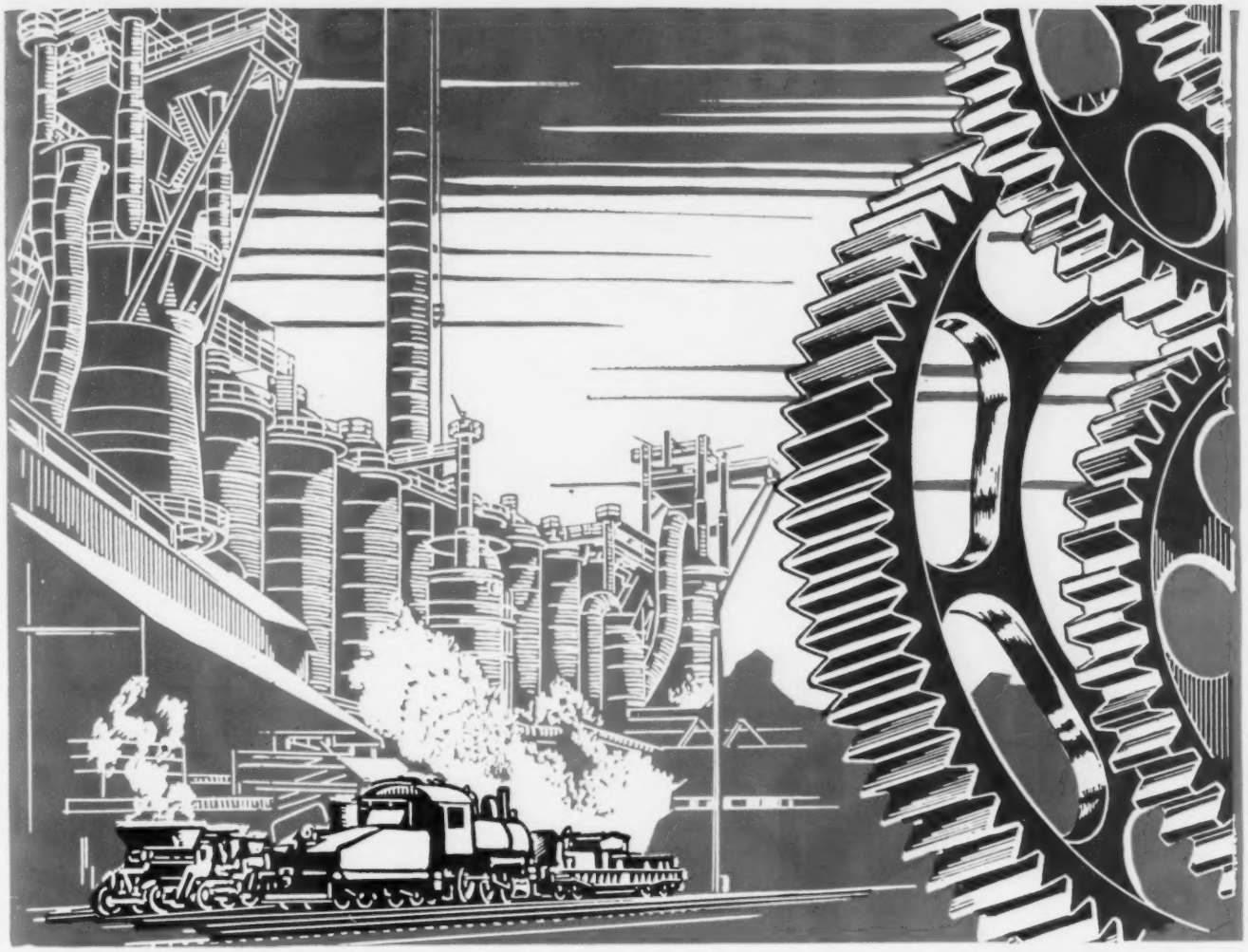
HEAD END, built for single or double beams up to 26", is ball-bearing throughout, either friction or motor driven with variable speed transmission, variable speed single drive, or multi-motor drive. Independent beam wind-up for beams over 26" in diameter.

Manufactured by

WEST POINT FOUNDRY & MACHINE CO.

WEST POINT, GEORGIA

YES! Tycol "Engineered Lubrication" performs better . . . BETTER . . . BETTER



Tycol Engineered Lubrication performs better because:

. . . *Tycol Engineered Lubrication* is scientifically engineered to meet every service condition in modern industry, no matter how extreme or unusual.

. . . *Tycol Engineered Lubrication* helps you "get it done" faster and more efficiently . . . production jumps when you switch to a Tycol oil or grease.

. . . *Tycol Engineered Lubrication* means new economies for you . . . by cutting repair bills, and lengthening equipment life.

Let Tide Water Associated help you select the best lubricant for your particular need. Write, wire or phone today to your nearest Tide Water Associated Office.

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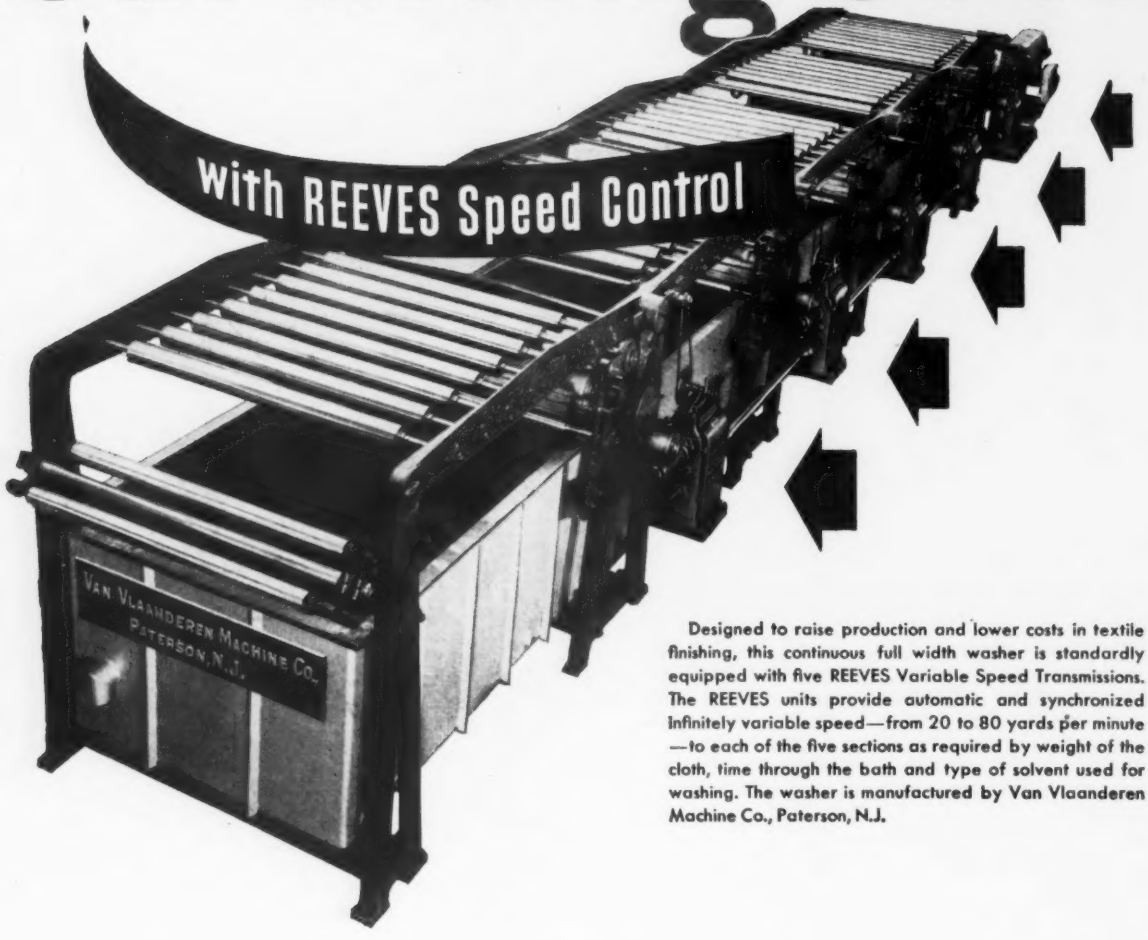
LUBRICATION — "ENGINEERED TO FIT THE JOB"

Beat Rising Costs



Designed to raise production and lower costs in textile finishing, this continuous full width washer is standardly equipped with five REEVES Variable Speed Transmissions. The REEVES units provide automatic and synchronized infinitely variable speed—from 20 to 80 yards per minute—to each of the five sections as required by weight of the cloth, time through the bath and type of solvent used for washing. The washer is manufactured by Van Vlaanderen Machine Co., Paterson, N.J.

• Applied to your machines, REEVES Speed Control can be your greatest asset in this day of rising costs and growing competition. Its ability to speed production, improve quality and cut costs has been proved on thousands of textile installations.

REEVES Variable Speed Drives compensate instantly and accurately for changes in texture, weight, temperature, moisture content, operator skill and other variable factors . . . provide the right speed for every job under every changing condition.

The complete REEVES line consists of three basic units, all available in the widest range of designs, sizes, capacities and speed ratios—with manual, push-button or completely automatic control.

A REEVES Speed Control Specialist, widely experienced in textile operations, will be glad to work with you to determine the unit or units which best meet your particular needs. Arrange an appointment by writing today—and ask for a copy of the comprehensive, 114-page catalog, No. W-450A

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

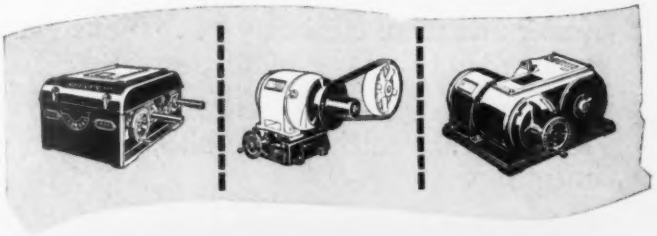
Recognized Leader in the Specialized Field of Speed Control Engineering

The Three Basic Reeves Speed Control Units

VARIABLE SPEED TRANSMISSION for providing infinite, accurate speed flexibility over a wide range—2:1 to 16:1. Sizes—fractional to 87 hp.

VARI-SPEED MOTOR PULLEY provides an instantly variable speed drive within 4:1 ratio for any constant speed motor. Sizes to 15 hp.

MOTODRIVE combines motor, speed varying mechanism and reduction gears in single compact unit. Speed variations 2:1 to 6:1 inclusive. Sizes to 15 hp.



ACCURATE • VARIABLE

Reeves Speed Control

GIVES THE RIGHT SPEED FOR EVERY JOB!

Leading The Field Today

Southern Shuttles

FOR PLAIN OR SHUTTLE CHANGING BOX LOOMS

Pioneered years ago and improved since to meet present day conditions

An Engineered Shuttle Throughout

Your choice of two materials and devices

First — our new Super Wear Resistant Ste-Hide

Our latest contribution to the loom operator,— a material which adds greatly to the life and satisfaction of the shuttle.

It stands up to the severest treatment and protects against cracking and breakage. Is unaffected by oil and moisture. Becomes smoother with wear.

Second — Hard vulcanized fibre, the accepted standard for years that made wood shuttles better.

The Interchangeable Tube Catch for paper tubes and wooden bobbins is pressed out of tempered steel and solidly anchored in the body of the shuttle without cutting away or removing of vital body structure.

Adjusting screw is provided on Spindle, which bumps on a solid plate that cannot loosen

The Patented Rubber Box provided to eliminate wear on metal base of paper tubes. This is an important feature, gaining favor with the trend to cut costs.

If You Wish the Finest Shuttle Made for this Purpose — Buy

Southern

Our Service Men will give you interesting detailed data.

Southern Shuttles Division

(WHERE PRECISION AND PERFECTION ARE DESIGNED INTO EVERY SHUTTLE)

of STEEL HEDDLE MFG. CO.

621 E. McBEE AVE., GREENVILLE, S. C.

Latest Data on Shuttles

#4

Read and Retain

Bearings that deliver plus-performance to WHITIN TWISTERS

History has a way of repeating itself. Whitin engineers considered the *past* performance of SKF Bearings when they considered the *future* performance of their High Speed Large Package Twisters. For SKF Bearings have assured smooth, clean performance; accommodated shaft deflections, and kept down maintenance costs on Whitin products for many years. On the basis of past plus-performance, SKF puts the right bearing in the right place. 6466

SKF INDUSTRIES, INC., PHILADELPHIA 32, PA.

● *Built by* WHITIN MACHINE WORKS

better STARCH through research

Auxiliary Room to Product Development Laboratory at A. E. Staley Manufacturing Company. Here new Textile Starches are processed, in miniature equipment, for use in laboratory tests.

•

After a new Textile Starch has been created in the Product Development Laboratory or Research Laboratory, it is processed in larger amounts in the Auxiliary Room and thoroughly tested in the Textile Laboratories. The perfected formula for this Starch is sent to the plant where it is then made up in larger amounts for actual mill tests.

Staley Laboratories work constantly to develop new products and improve present products to be of greater service to our customers. Strict Control Laboratory supervision, throughout every step of processing, guarantees uniform quality and consistent, dependable performance of each and every shipment.

Staley's prompt service and complete cooperation is available to you. Write, wire or phone for detailed information.

STALEY STARCHES

A. E. STALEY MFG. COMPANY

Staley's CORN AND SOY BEAN PRODUCTS

ATLANTA • SPARTANBURG
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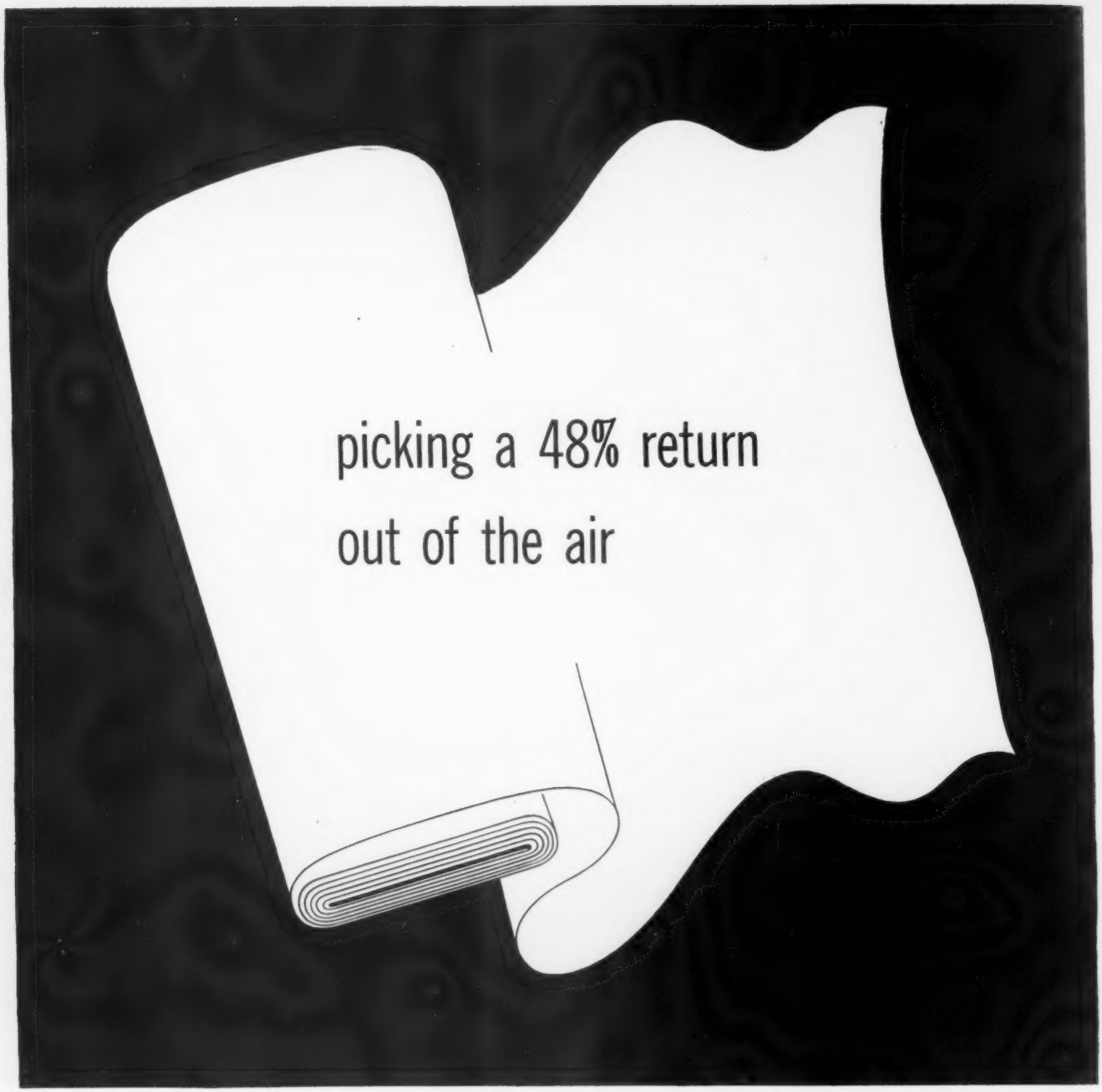


A Southern cotton mill does it regularly since the weave room was air conditioned by Carrier.

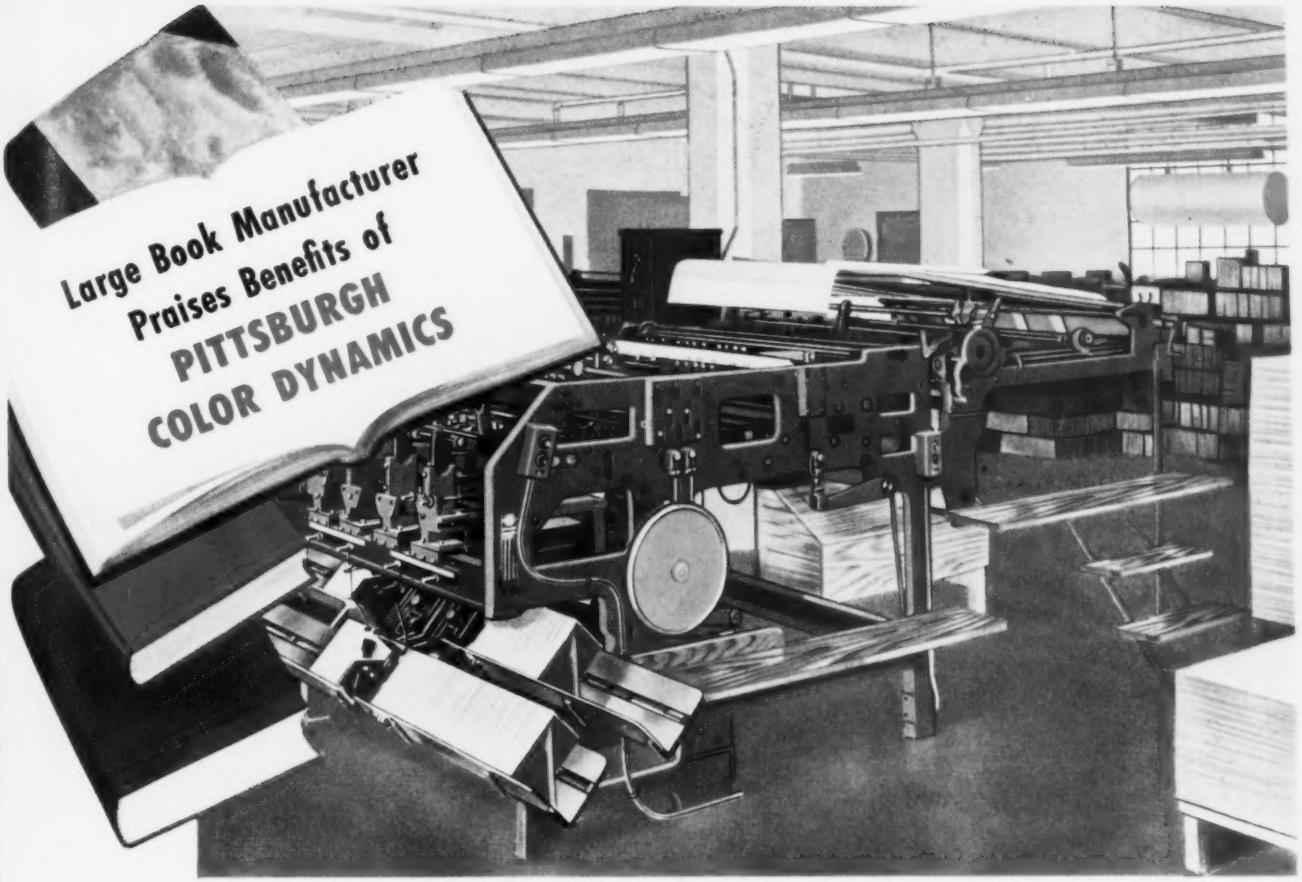
As a result of Carrier-controlled humidity and temperature, each loom now averages 688 yards more cloth per year. The net profit on that *extra* production at current market prices equals 48 per cent per annum on the total investment for air conditioning.

These figures are conservative. They don't take into account such benefits of air conditioning as fewer seconds, better choice of labor, lower employee turnover and less absenteeism.

To achieve goals like this, air conditioning has to be engineered soundly. That's why so many of the country's leading textile mills choose Carrier to design and install systems for weave rooms, spinning and carding rooms, dyehouses or complete mills.

Remember, with Carrier air conditioning you get the *added* value of pioneering research and world-wide experience. These things are important when your goal is greater production, higher quality and lower cost. Carrier Corporation, Syracuse, New York.

Carrier AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING



Production Efficiency . . . Worker Morale . . . Housekeeping Standards—are improved in plant of George McKibbin & Son by new scientific system of painting

EXPERIENCE in a wide variety of industries has shown that workers whose surroundings are painted according to the principles of Pittsburgh's scientific painting system of COLOR DYNAMICS benefit in many ways.

Another striking instance of such betterments are the results achieved in the plant of George McKibbin & Son, of Brooklyn, New York, who print and bind 35,000 books daily. Their output includes books of all kinds—school and college text books, fiction and non-fiction, scientific and technical manuals.

"Results obtained from the application of Pittsburgh COLOR DYNAMICS," writes George McKibbin, "have been very gratifying. The colors which you specified have had a favorable effect upon the morale of our employees, have improved our housekeeping standards, and have also contributed to a reduced turnover and fewer accidents. Since all these things help production, some of our increase in output must be credited to COLOR DYNAMICS, thus justifying our decision to make use of this new painting method."

Hundreds of similar examples and comments are proving the soundness of the principles of Pittsburgh COLOR DYNAMICS which are based upon the *energy in color.*

By this method, every color used on machines, walls, floors and ceilings of a plant performs a definite function. *Focal* colors used on a machine provide an easily visible contrast between the machine itself and the material being fabricated. *Eye-rest* colors provide eye-relaxation for the worker when he glances up from his work. *Morale-building* colors create a background of cheerfulness which is the best antidote to mental depression. *Safety* colors used on boundary lines and on mobile equipment lessen accident hazards.

Your plant may be in need of COLOR DYNAMICS. Why not test its value on a machine or two—or in one department of your plant? Note the difference it makes—in efficiency, morale and output.

We'll gladly send you a FREE booklet which explains simply and clearly what Pittsburgh's COLOR DYNAMICS is and how you can put it to work.

Paint RIGHT with Color Dynamics
Paint BEST with Pittsburgh Paint!

The benefits of COLOR DYNAMICS are made more enduring when you use Pittsburgh's long-lasting high-quality paints for every need.

WALLHIDE—available in four types; **FLAT**—a velvet-like finish that is beautiful and restful; **SEMI-GLOSS**—with higher sheen; **GLOSS**—with enamel-like sheen; **PBX**—extra-durable finish can be washed frequently without streaking or spotting.

LAVAX PBX ENAMEL—for woodwork, furniture or metal trim. Brushes out freely and easily to a smooth, satin finish that resists marring and abrasion.

FLORHIDE—for floor surfaces. Quick-drying, tough, can be scrubbed with soap solutions.

LAVAX MACHINERY ENAMEL—a durable finish impervious to grease, grime or dirt.

SEND FOR A COPY OF THIS BOOK!

Our booklet—"COLOR DYNAMICS IN INDUSTRY"—explains this new painting system and how you can use it in your plant. Mail this coupon for your FREE copy.

Pittsburgh Plate Glass Co., Paint Div., Department TW-58, Pittsburgh 22, Pa.

Please send me a FREE copy of your new revised and enlarged Booklet, "*Color Dynamics In Industry*"

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PITTSBURGH PLATE GLASS COMPANY

FLASH DRY SAMPLES

to determine moisture content

The moisture content of yarns and fibers is determined accurately and rapidly by the Moisture Teller, Model 278T-12, equipped with a sample pan 8" in diameter and 12" deep.

To test a specimen, a weighed sample is placed in the drying chamber. A blower forces a large volume of heated air through the material. The ventilation provided by the fan removes the moisture liberated by the temperature. The result is quick drying of the test sample. At the end of the drying cycle, the sample is reweighed. The loss in weight represents the amount of moisture driven off. Thus, an accurate gravimetric moisture determination is completed in just a few minutes. A large sample of wool can be tested in 12 minutes.

The drying chamber is double walled. The heated air enters at the top and is forced down through the sample. At the bottom of the pan, the hot moisture laden air enters the space between the walls of the chamber and rises upward to exhaust vents located around the upper periphery of the sample pan. The reversed flow of the spent hot air between the double walls assures even temperature throughout the length and breadth of the drying chamber. Thus, the entire sample is dried at a uniform temperature. The chosen drying temperature is maintained by means of an adjustable thermostat. Drying time is controlled by a timer switch.

The Moisture Teller is a simple, sturdy, practical instrument, equally adapted to use in either the plant or the laboratory. Two pans are furnished with each unit so that while one is in the Moisture Teller the second can be used in preparing the next sample.

Other sample pans from 1" to 12" in depth can be furnished to suit special requirements.

Write for prices and specifications to Dept. M.

HARRY W. DIETERT CO.

9330 ROSELAWN AVE., DETROIT 4, MICHIGAN

SAND · MOLD · MOISTURE · SULFUR · CARBON

for tough, rugged drives

The new RAY-MAN V-BELTS, developed by Manhattan engineers, are an outstanding contribution to industry. Here are the distinctive features of new RAY-MAN V-BELTS:

OIL-PROOF . . . NON-SPARK . . . HEAT-RESISTANT

Special-Engineered Strength Members absorb shock better. They are protected against Moisture, Shrinkage and Oxidation.

If you have a particularly troublesome drive that has been hard on belts and expensive to maintain, call your Manhattan representative to tell you about RAY-MAN V-BELTS.

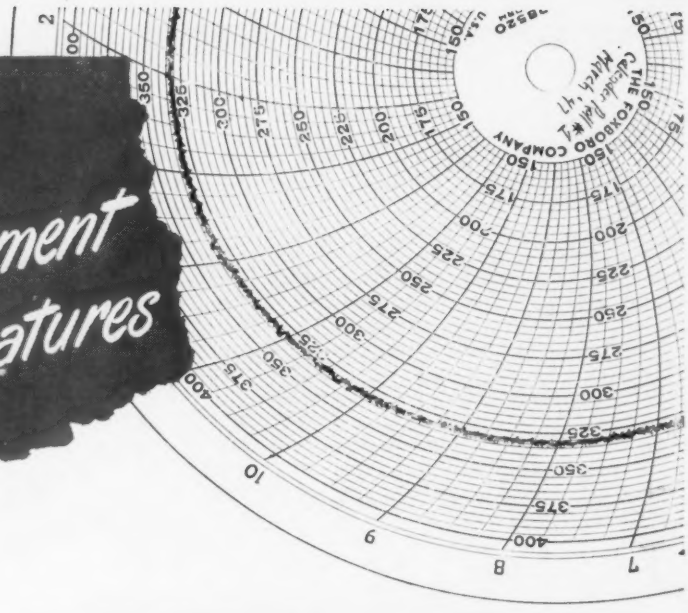
Manhattan's research-inspired leadership has brought you great benefits—will bring you more . . . "Keep Ahead with Manhattan"

RAYBESTOS R M MANHATTAN

RAYBESTOS-MANHATTAN INC.

MECHANICAL RUBBER PRODUCTS — RUBBER COVERED EQUIPMENT — FRICTION MATERIAL — ASBESTOS TEXTILES
PACKINGS — POWDERED METAL PRODUCTS — ABRASIVE & DIAMOND WHEELS — BOWLING BALLS

MANHATTAN RUBBER DIVISION **PASSAIC, NEW JERSEY**



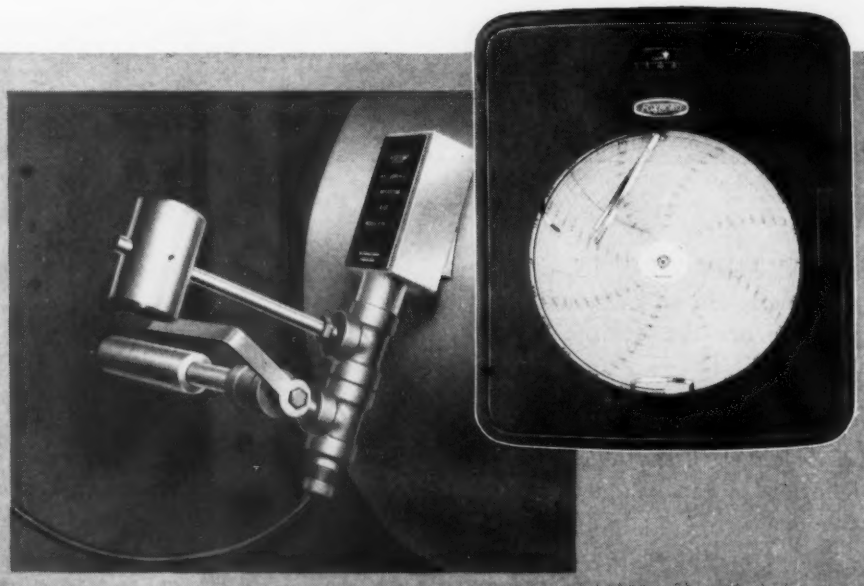
Now! Continuous Measurement of Roll Surface Temperatures

A UNIQUE, NEW FOXBORO SYSTEM

AN ENTIRELY NEW type of measuring head coupled with the sensitive, instantly-responding Dynalog Electronic Recorder solves a tricky problem of long standing. This combination has proven far more accurate—and convenient—in the continuous measurement of roll surface temperature than previous devices.

The Foxboro measuring element is very rugged, yet it bears so lightly (only 0.75 gm per sq. cm.) that it avoids any tendency to mark or score the roll. Errors due to friction, radiation, and convection, so common to conventional roll surface temperature bulbs, are completely avoided. Errors and inconveniences arising from use of hand-held surface pyrometers are eliminated. Recorder may be located up to 1000 feet away, connected with electric cable.

Using either a Dynalog Recorder or Controller, this is the system to install wherever closer, continuous measurement or control of roll surface temperatures means a saving in steam, a reduction in waste, a more uniform product. Get complete details—Bulletin 405. **The Foxboro Company, 84 Neponset Avenue, Foxboro, Mass., U. S. A.**



Foxboro Dynalog Controller at far right. Installation photo shows New Sensitive Element—basically, a miniature resistance bulb having highest sustained accuracy of any temperature measuring element within its range. Accuracy of readings is protected by complete isolation of element from ambient and radiant temperature effects. High speed response to roll surface temperature changes. Operating range: —40°F. to +350°F. or higher under special conditions.

FOXBORO
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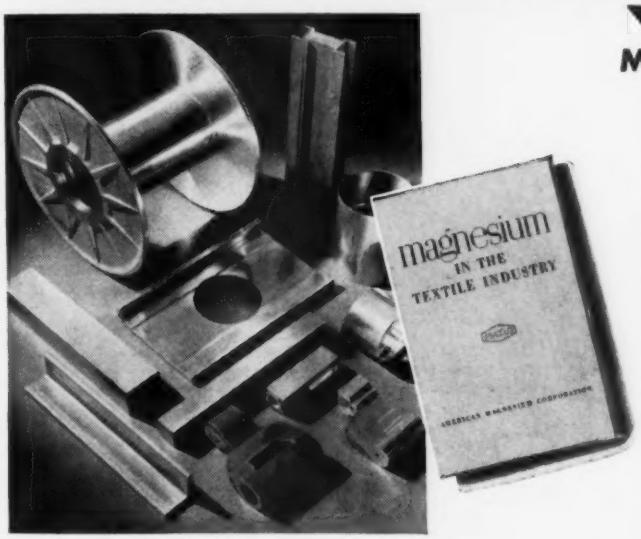
RECORDING · CONTROLLING · INDICATING
INSTRUMENTS

STOP

THE GREAT METEORITE which struck what is now Arizona, before white men's arrival in America, crashed its way through 2,400 feet of solid rock before stopping, scientists estimate. The crater it left is still almost a mile across and a city block deep.

START

V-2, the Nazis' rocket projectile, traveled only 38 feet per second at take-off—so slowly its flight could be seen, although it later reached an estimated 1,100 miles per hour at impact. Before it could attain that supersonic speed, it had to overcome its own inertia.



MORAL: Fast-moving objects, particularly if they are heavy, take a lot of power to stop, a lot to get started. That's important in textile machinery, where reciprocating parts do a lot of stopping and starting. *When those parts are made of lightweight American Magnesium,* you save a lot of power, vibration, and wear on machinery—and may save a lot of "down time". Ask your builder to save power and reduce vibration for you, by using American Magnesium wherever possible.

ALUMINUM COMPANY OF AMERICA, sales agent for American Magnesium products, 1705 Gulf Building, Pittsburgh 19, Pennsylvania.

FREE—Write for your copy of "Magnesium in the Textile Industry". Full of information on its mechanical properties and advantages in textile applications.

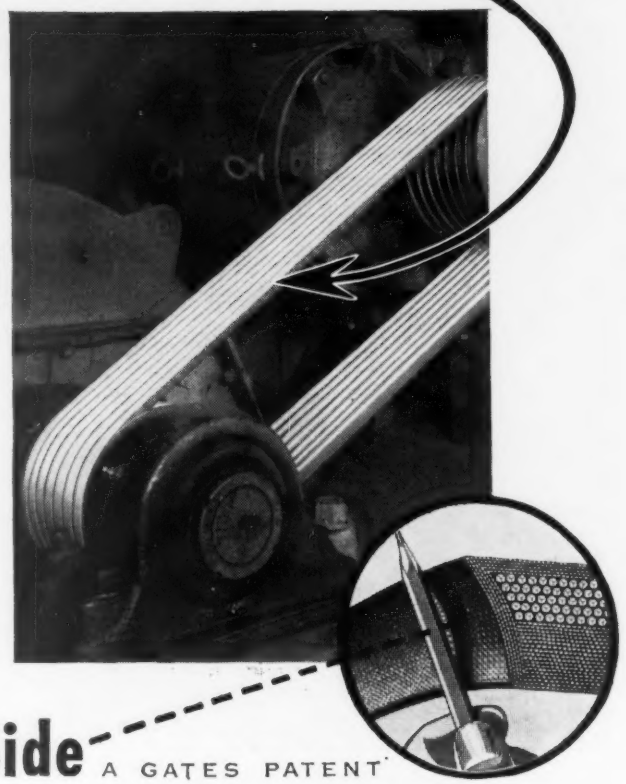
MAGNESIUM MAZLO PRODUCTS

AMERICAN MAGNESIUM CORPORATION

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

THE SIDE OF A V-BELT is the ONLY Part that TOUCHES the Pulley

Diagram of V-Belt in Sheave-Groove



Naturally, it GETS the WEAR!

Anyone experienced with V-Belt drives knows that the *sides* of a V-Belt are what really get the wear.

It's the *sides* that grip the pulley. They pick up all the power from the driver pulley, transmit that power to the belt as a whole and then, once more, deliver the power to the driven pulley. Moreover, it's the sides that take all the wear against the sheave-groove wall.

That is why you always notice that the *sidewall* of a V-Belt is the part that *wears out first*—and, naturally, if you prolong the life of the sidewall, you *lengthen* the *life* of the *belt!*

Now see how the Concave Side SAVES Sidewall Wear and Lengthens Belt Life!

A GATES PATENT

The simple diagrams on the right show exactly why the ordinary, straight-sided V-Belt gets excessive wear along the *middle* of the sides. The diagrams show also why the Patented Concave Side greatly *lengthens the life* of the *sidewalls* of Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belt can possibly give.

Saving SIDEWALL WEAR is more important NOW than ever before.

Now that Gates *SPECIALIZED* Research has resulted in Super Vulco Ropes capable of carrying much heavier loads—fully 40% higher horsepower ratings—the sidewall of the belt is called upon to do even more work in transmitting these heavier loads to the pulley. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important now than ever before!

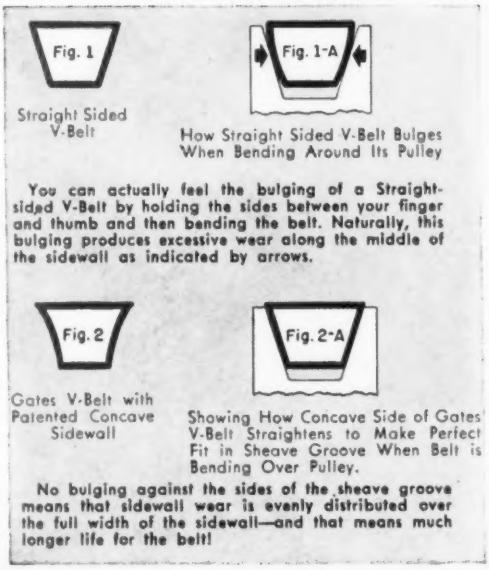


Fig. 1
Straight Sided V-Belt
Fig. 1-A
How Straight Sided V-Belt Bulges When Bending Around Its Pulley
You can actually feel the bulging of a Straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.
Fig. 2
Gates V-Belt with Patented Concave Sidewall
Fig. 2-A
Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt is Bending Over Pulley.
No bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

485

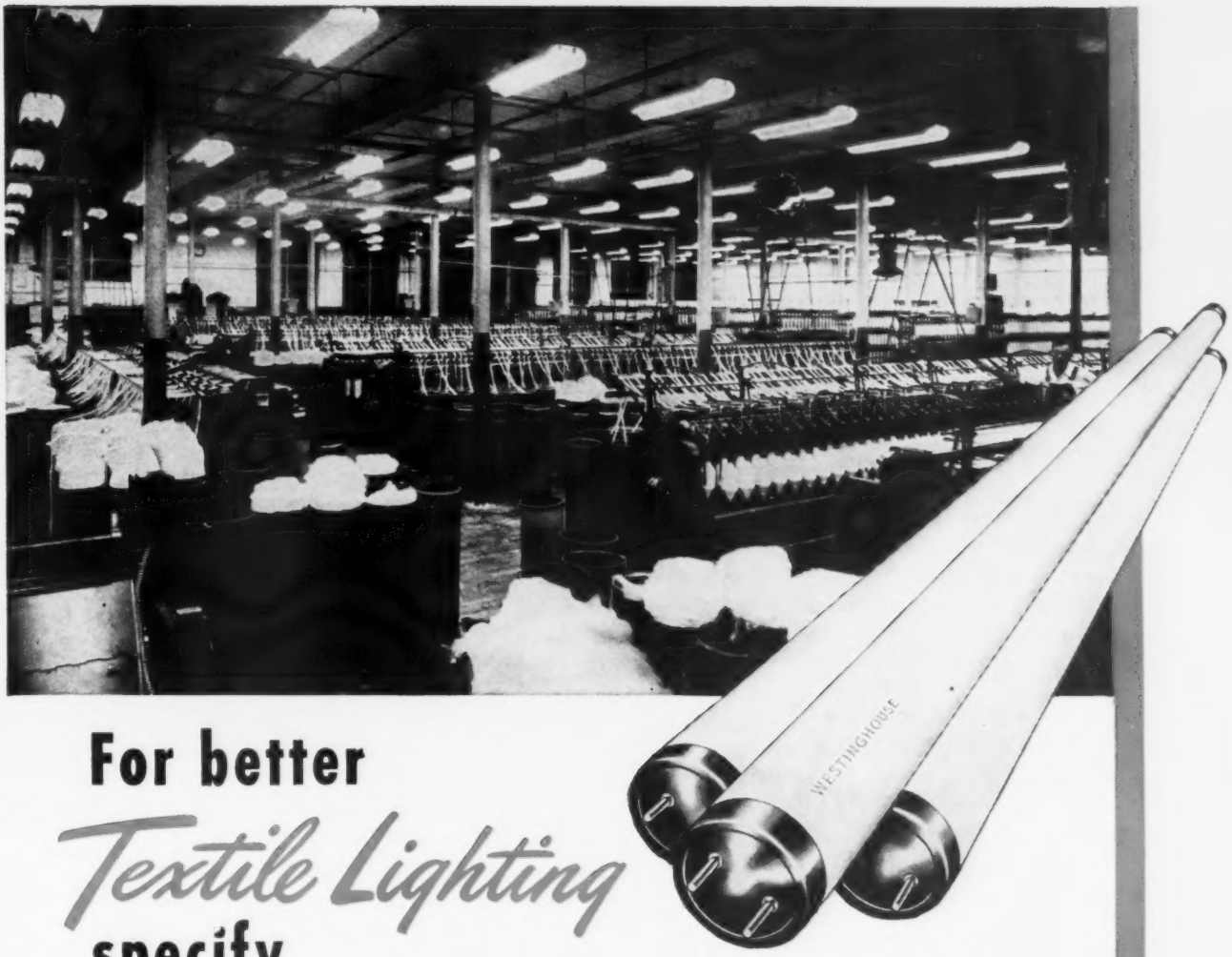
THE GATES RUBBER COMPANY, DENVER, U. S. A. *"The World's Largest Makers of V-Belts"*

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks IN ALL INDUSTRIAL CENTERS of the U. S. and 73 Foreign Countries

Gates

The Mark of SPECIALIZED Research



For better *Textile Lighting* specify Westinghouse

THE NAME YOU KNOW IN LAMPS...

Westinghouse Fluorescent Lamps bring to industry a practical means of obtaining the high intensity lighting needed for modern speed production. They provide an even distribution of light, are cool burning and duplicate most closely the color of outdoor daylight. Westinghouse Fluorescent Lamps provide an economical way to speed production, decrease spoilage and reduce accidents. For better See-Ability in your plant or office . . . for a lighting investment that will continue to keep costs down and increase the productivity of both men and machines...specify Westinghouse—the name you know in lamps.

Send for free booklet A-4759 "A Practical Guide to Westinghouse Fluorescent Lamps and Equipment."

Westinghouse *Lamps*

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

No worry about "weak links" when all piping is Crane

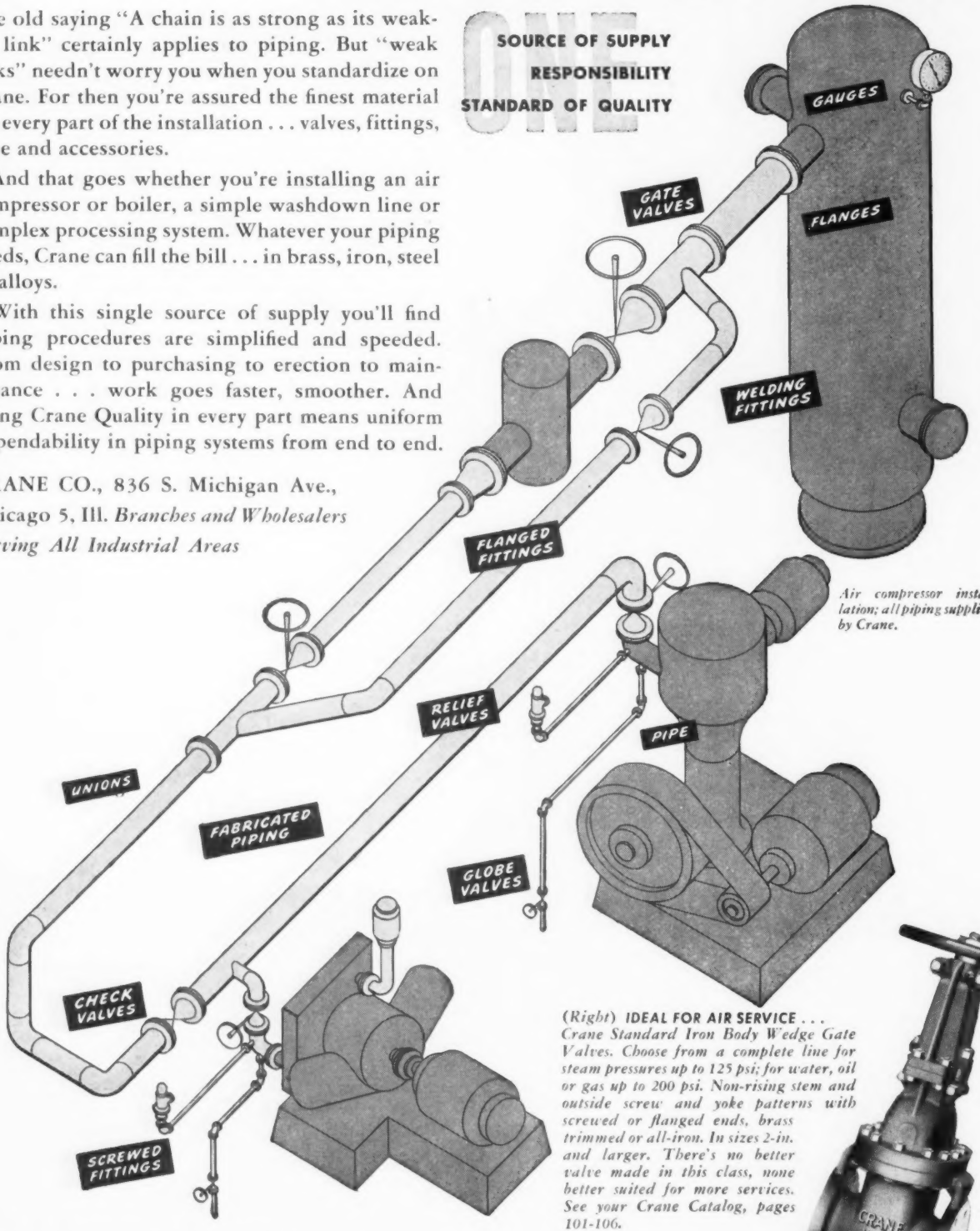
The old saying "A chain is as strong as its weakest link" certainly applies to piping. But "weak links" needn't worry you when you standardize on Crane. For then you're assured the finest material for every part of the installation . . . valves, fittings, pipe and accessories.

And that goes whether you're installing an air compressor or boiler, a simple washdown line or complex processing system. Whatever your piping needs, Crane can fill the bill . . . in brass, iron, steel or alloys.

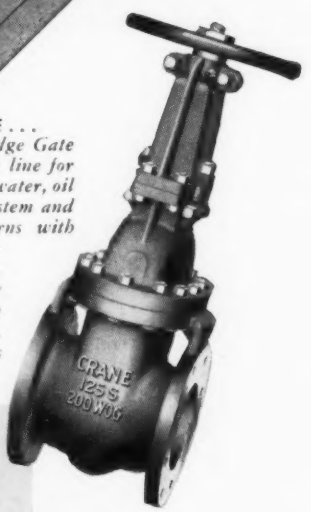
With this single source of supply you'll find piping procedures are simplified and speeded. From design to purchasing to erection to maintenance . . . work goes faster, smoother. And using Crane Quality in every part means uniform dependability in piping systems from end to end.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill. *Branches and Wholesalers Serving All Industrial Areas*

ONE
SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY



Air compressor installation; all piping supplied by Crane.



(*Right*) **IDEAL FOR AIR SERVICE . . .** *Crane Standard Iron Body Wedge Gate Valves. Choose from a complete line for steam pressures up to 125 psi; for water, oil or gas up to 200 psi. Non-rising stem and outside screw and yoke patterns with screwed or flanged ends, brass trimmed or all-iron. In sizes 2-in. and larger. There's no better valve made in this class, none better suited for more services. See your Crane Catalog, pages 101-106.*

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VALVES . FITTINGS
PIPE . PLUMBING
AND HEATING

CRANE

FOR EVERY PIPING SYSTEM

Improved SANTOMERSE No. 1

penetrates *FAST* ...spreads *THOROUGHLY*

Santomerse No. 1 has achieved wide use in textile dyeing operations because of its fast penetration and thorough spreading action, which are graphically illustrated in the photograph above... The right-hand glass contains water only, the water at the left contains a small amount of Santomerse No. 1. A drop of color added to each shows the quicker, more complete dispersion attained in the Santomerse No. 1 solution.

By breaking down the surface tension of water, Santomerse No. 1 provides the leveling effect needed in dye baths. It can be used prior to dyeing to wet out thoroughly and to assist penetration, or can be added directly to the dye bath... Because of its high detergency value and ease of rinsing, Santomerse No. 1 is also an excellent scouring agent for all fibres.

For complete information on Santomerse No. 1 applications in the textile and dyeing fields, send for application Data Bulletin No. P-118. Write to MONSANTO CHEMICAL COMPANY, Phosphate Division, 1700 South Second Street, St. Louis 4, Missouri, or simply return the coupon. District Sales Offices: New York, Philadelphia, Chicago, Boston, Detroit, Cleveland, Cincinnati, Charlotte, Birmingham, Los Angeles, San Francisco, Seattle. In Canada: Monsanto (Canada) Limited, Montreal.

Santomerse; Reg. U. S. Pat. Off.

MONSANTO CHEMICALS

MONSANTO CHEMICAL COMPANY
Phosphate Division
1700 South Second Street, St. Louis 4, Missouri

TWP-5

Please send a copy of Application Data Bulletin No. P-118 on Santomerse No. 1 to:

Name _____ *Title* _____

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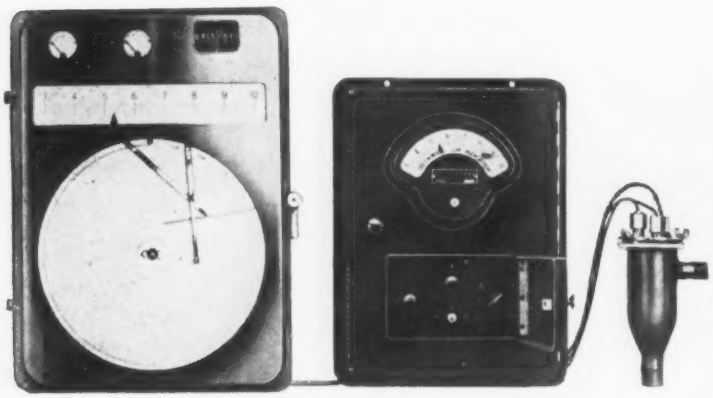
SERVING INDUSTRY... WHICH SERVES MANKIND

How To Keep pH *Under Perfect Control*

Bristol's Continuous pH *Controller Maintains The Value You Select Automatically*



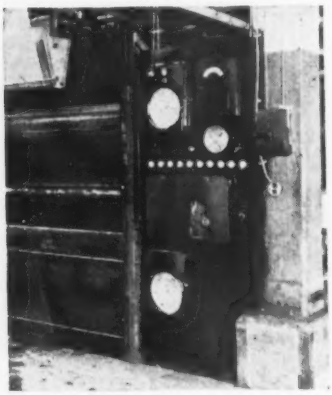
You get *precision control* of pH value when you rely on this accurate Bristol controller to keep pH "on the nose" for textile processing. Eliminates periodic sampling and manual control. Use it for:

- **Neutralizing after carbonizing.**
- **Condition of water for dye and bleach house.**
- **Neutralizing dye house waste.**
- **Testing condensate from heating coils and automatically dumping it if acid.**
- **Raw wool scouring.**

This instrument pays for itself by making you *sure* about pH. Many successful installations in textile plants here and abroad. INSTRUMENTS IN STOCK FOR IMMEDIATE DELIVERY. Bulletin pH 1302 will tell you more. Write: THE BRISTOL COMPANY, 157 Bristol Road, Waterbury 91, Conn. (The Bristol Co. of Canada, Ltd., Toronto, Ontario; Bristol's Instrument Co., Ltd., London, N.W. 10, England.)

IMMEDIATE DELIVERY

Bristol has hundreds of Recording and Controlling Instruments as well as Pyrometers and Thermocouples *in stock* for immediate delivery. Send for Bulletin W1811 Stock Instruments, and Bulletin p1235, Thermocouples and Pyrometer Accessories.



pH and cycle control on wool scouring at Kent Manufacturing Company

BRISTOL

Engineers process control for better products and profits

BRISTOL INSTRUMENTS FOR THE TEXTILE PLANT

For Cotton Weaving And Finishing:

Automatic Control for Raw Stock, Yarn, and Piece Goods, Dryers, Sour Pit, Mixing Water, Boiling Off Kettles, and Bleaching Kettle.
Temperature Control for Dryers.
Humidity Control for Dryers.
Slasher Control.
Kier-Boiling Control System.
Dry Can Control.
Automatic Control Dye Jigs, Dye Machines, Dye Kettles.
Humidity Recorders for Carding, Combing, Drawing, Spinning, Weaving.
Flow Meters for Measuring Steam to Each Department.
Liquid Level Recorders and Controllers for Water Tanks and Wash Wheels.

For Woolen And Worsted:

Automatic Temperature Control for Scouring, Drying, Dyeing, Steaming, and Water Mixing.
Coordinated Process Control for Dyeing and Wash Wheel.
Humidity Control for Sorting, Carding, Weaving, Spinning.
Time-Temperature Control of Dye Vats, Machines and Tubs.
Liquid Level Control Instruments for Water Tanks, Wash Wheels.
Tachometers for Yardage Through Tentering Dryer.
Automatic Temperature Control of Water Mixing.
Control for Back Washers and Back Wash Dryers.
Control for Carbonizing.

For Silk And Rayon:

Control for Degumming Tanks.
Control for Dyeing.
Rayon Slasher Control.
Control for Bleaching and Drying.
Humidity Control for Twist Set Box.
Humidity Control in Rayon Spinning Room.

For Knit Goods:

Control for Scouring, Boarding, and Dyeing.
Control for Washing and Bleaching Equipment.

For Power Plant:

Flow Meters for Steam and Water.
Recording Voltmeters and Ammeters for Electric Lines.
Recording Gauges for Steam Pressure, etc.
Recording Thermometers.
Draft Recorders and Controllers.

Further information supplied on request

AUTOMATIC CONTROLLING AND RECORDING INSTRUMENTS

Somehow the Jones' Always Have the Money Ready

In our town, there is no family quite like the Jones'. They pay for their new car while driving the old one.

This is how it works:

At the end of one year, Ralph Jones figures that his $1,500 car is worth $1,200 so he puts $300 in the bank—not in the family checking account but in a "New Car Account."

At the end of the second year, the Jones' have $600 in the bank and a two-year old car which they value at $900. So it goes until the old car is "written off" and they are ready to buy a new one.

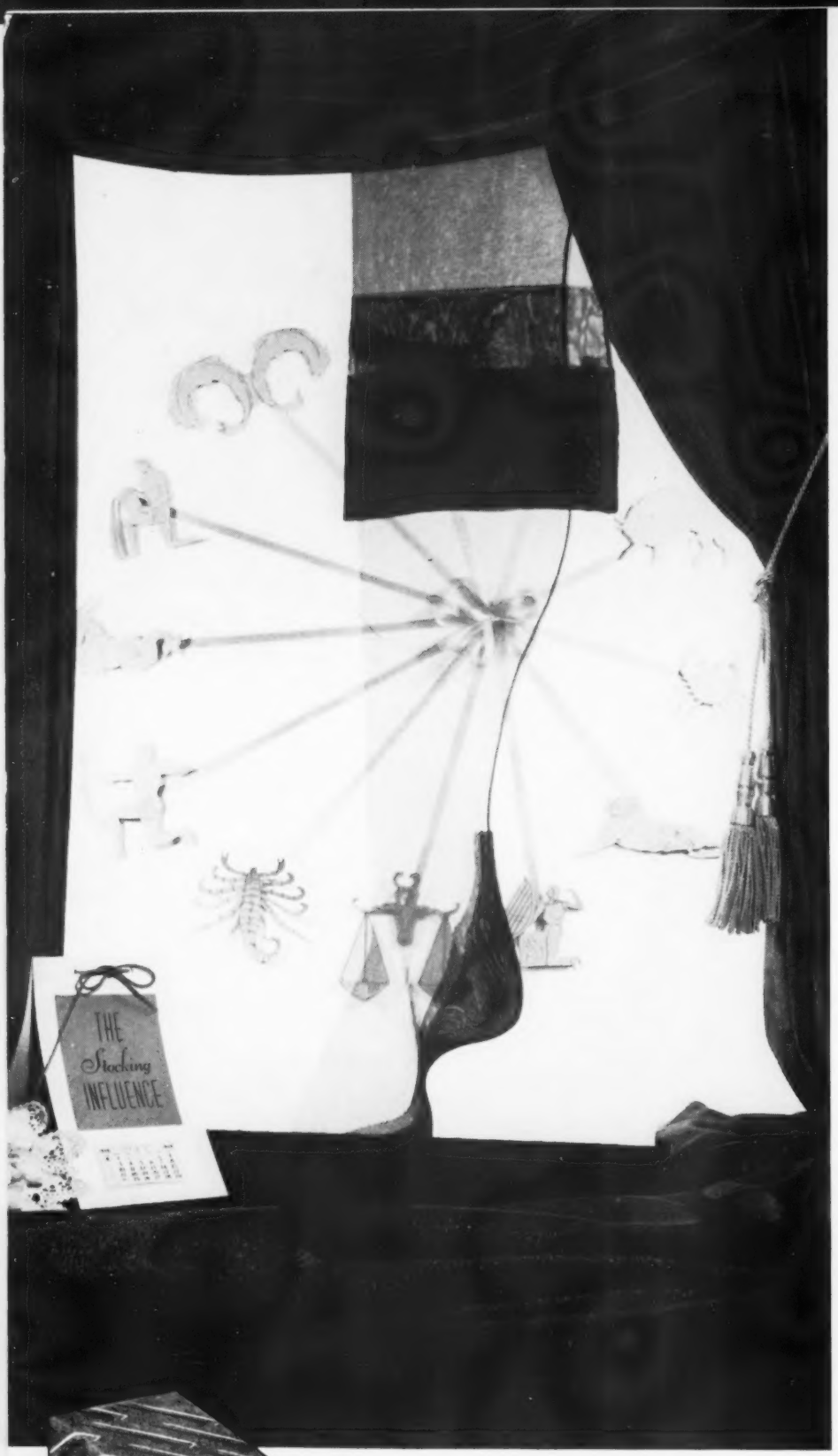
"Our checking account has its ups and downs," Ralph Jones told me the other day, "but we never borrow from the New Car Account."

That's why the Jones' always have the money ready.

Take a look at your last Financial Statement: Do you really have the money that you charged off for Depreciation in the past years? Is it part of your "current" assets . . . or is it earmarked as a separate fund under "fixed" assets?

Write today on your business stationery for your copy of "Good Housekeeping in Business" —a pamphlet which presents what we believe to be a *logical* basis for handling depreciation money. We will be glad to send it to you.

TEXTILE MACHINE WORKS
READING, PENNA.



For extra Smoothness

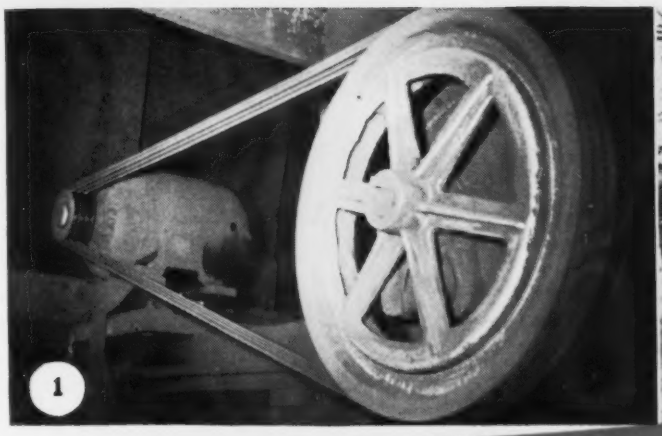
Textile Spring-Beard Needles are as smooth as the most exacting of scientific controls can make them.

And perfect smoothness is just one of the extras you get as the result of Textile's quality controls—automatic controls, electronic controls, controls that do not relax until the needles are in position in your knitting bar.

You'll see the difference in improved knitting results.

TEXTILE MACHINE WORKS
Reading, Penna.

Textile
SPRING-BEARD NEEDLES
For Full Fashioned and Warp Knitting



For Any Atmospheric Hazard There's a CENTURY MOTOR— Properly Protected—To Assure Continuous Performance

To protect motors against the hazards of abnormal atmospheres, Century provides Totally Enclosed Fan Cooled and Explosion Proof frames, also Splash Proof.

These are in addition to open type frames on which the upper half of the frame is protected against falling or dripping particles.

Whatever your requirements there's a Century motor designed to accurately meet the needs of your equipment.

The illustrations here are typical of the variety of applications which are successfully powered by Century motors.

1—Century 7½ horsepower *totally enclosed fan cooled* motor drives an elevator leg in a dusty, dirty atmosphere.

2—Century 5 horsepower *explosion proof* motor provides protection against explosions at a gasoline storage plant.

3—Three horsepower Century *splash proof* motors provide protection from splashing water as well as from all kinds of weather conditions on a railroad car-washing unit.

4—Century 100 horsepower *general purpose* motors are used to drive air compressors in clean surroundings.

Century builds a complete line of fractional and integral horsepower electric motors, in all popular sizes to meet the requirements of industrial production, commercial and appliance needs.

Specify Century for all your electric power requirements.

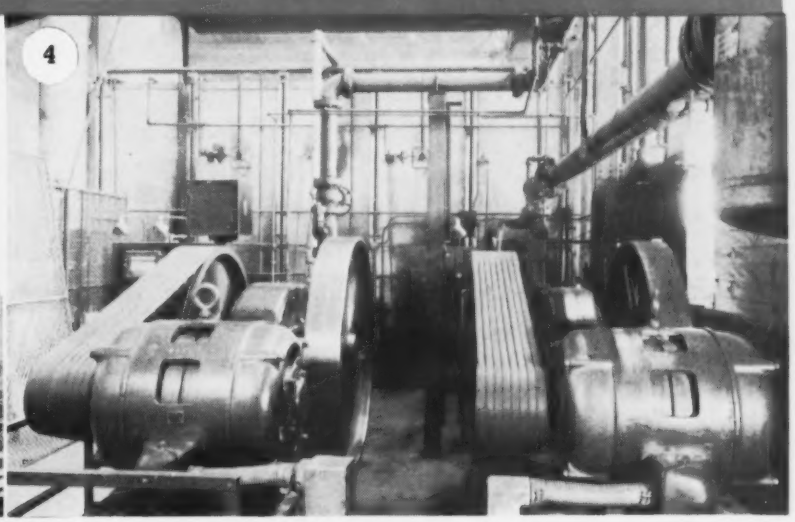
CENTURY ELECTRIC COMPANY

1806 Pine Street, St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

Century C MOTORS

541



From Sheer Silks to Coarse Woolens...

You Can Trust
WHITNEY
Silent Chain
To Help Maintain Uniformity of Weaves

If you are a weaver of cloth or a manufacturer of textile machinery you can trust Whitney Silent Chain to help you maintain quality. The *positive,* smooth flowing power transmitted by Whitney Silent Chain assures product uniformity . . . cuts down seconds and rejects. Productivity is increased because full power is transferred from driver to driven mechanism. In addition, Whitney Silent Chain provides long operating life with minimum maintenance. It withstands shock loads without breakage. And to complete the positive drive combination, use Whitney Silent Chain and accurately Cut Tooth Sprockets . . . *the all-steel drive.*

Want more information? Our catalog will be gladly sent on request.

The Whitney Chain & Mfg. Co.

211 HAMILTON STREET, HARTFORD 2, CONNECTICUT

ORONITE CHEMICAL COMPANY

REG. U. S. PAT. OFF.

THE NAME TO WATCH IN CHEMICALS

D-40 DETERGENT WORKS FASTER AND CUTS COSTS

Here is a detergent that offers new economies in washing and cleaning operations. D-40 is easily blended with other materials. As a cleaner by itself its effectiveness is unsurpassed.

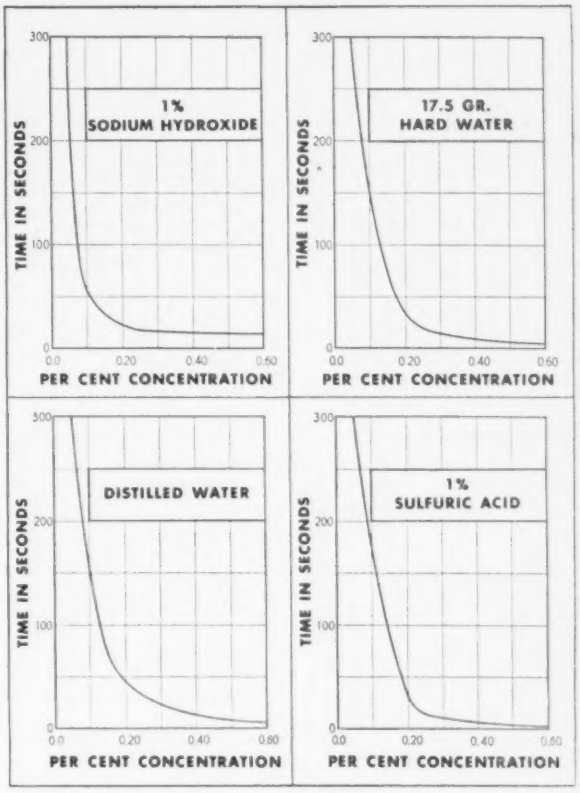
Greater foam heights...stability...greater detergency...shorter wetting times and quick solubility in hard or soft water are a few of its advantages.

There is an ever increasing number of industrial applications for D-40 Detergent either by itself or for compounding. Possibly your costs too, can be lowered through the use of this product.

For more detailed information contact one of the offices listed below.

TESTS SHOW RAPID WETTING OF D-40

The charts below show the results of wetting time tests of D-40 using the Draves-Clarkson method. Standard cotton skeins were used in distilled water, 1% sodium hydroxide, 1% sulfuric acid and 17.5 gr. hard water, all at 25° C.



From these tests it is apparent that short wetting and sinking times are outstanding properties of D-40 Detergent. This high level of surface activity in low concentrations proves D-40 saves time, cuts costs. It will pay you to get the facts about this remarkable product.

ORONITE CHEMICAL COMPANY

200 BUSH STREET, SAN FRANCISCO 4, CALIFORNIA
STANDARD OIL BLDG., LOS ANGELES 15, CALIFORNIA
30 ROCKEFELLER PLAZA, NEW YORK 20, NEW YORK
600 S. MICHIGAN AVENUE, CHICAGO 5, ILLINOIS

Go Lead for Acid Linings

When you want to line acid tanks or to cover equipment exposed to corrosive fumes or splash . . . go for tried-and-true protection. *Go National for Lead!*

Lead resists acid . . . is easily worked, readily shaped to irregular contours . . . and can be "burned" to form continuous, corrosion-resistant surfaces.

National Lead brings you different types of lead to suit your conditions. Here are the three basic types:

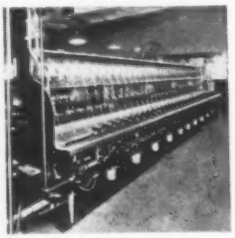
1 Chemical Lead: This is a practically pure lead, substantially free from bismuth and containing a small amount of copper, which boosts corrosion resistance and endurance limit. It has been used so successfully throughout industry that it is accepted as the standard lead for acid-handling. The other types of lead for industrial use are simply Chemical Lead alloyed with varying quantities of other metals to meet special service needs.

***"One-piece" linings** are obtained with lead. "Burning" the edges of each sheet together gives a continuous corrosion-resistant lining.*

2 Tellurium Lead: This is Chemical Lead to which has been added a small amount of tellurium. You get all of lead's regular advantages plus others needed for specific jobs. For example: one added feature of Tellurium Lead is its increased corrosion resistance at high temperatures.

Another is its ability to work-harden. Mechanical stress, such as bending, stretching or hammering, actually *increases* Tellurium Lead's tensile strength and resistance to fracture.

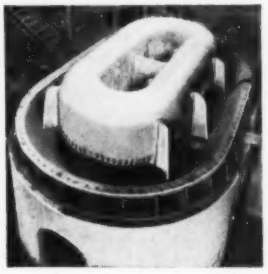
Use of Tellurium Lead is recommended where you have to fight *both* stress and corrosion.



***Vibration or other fatigue stresses** won't weaken Tellurium Lead. Here, it's used as a protective covering on rayon spinning machines.*

3 Antimonial Lead: This is made from either Chemical or Tellurium Lead by alloying with small amounts of antimony to secure greater tensile and mechanical strength. 6% of antimony added to Chemical Lead almost doubles its tensile strength. This, plus greater stiffness, makes Antimonial Lead suitable where mechanical strain is severe or where linings are supported only by a skeleton framework.

Antimonial Lead also is harder and more resistant to abrasion and cutting. It's a good bet wherever erosion or physical abuse exists. However, as antimony lowers the melting point, we do not recommend Antimonial Lead for use above 240° F.



***Vacuum processing** demands a strong, stiff lead. That's why Antimonial Lead forms the large "cracker pipe" (center) of this partly assembled evaporator for coke by-products. Lead also lines the interior of the evaporator.*

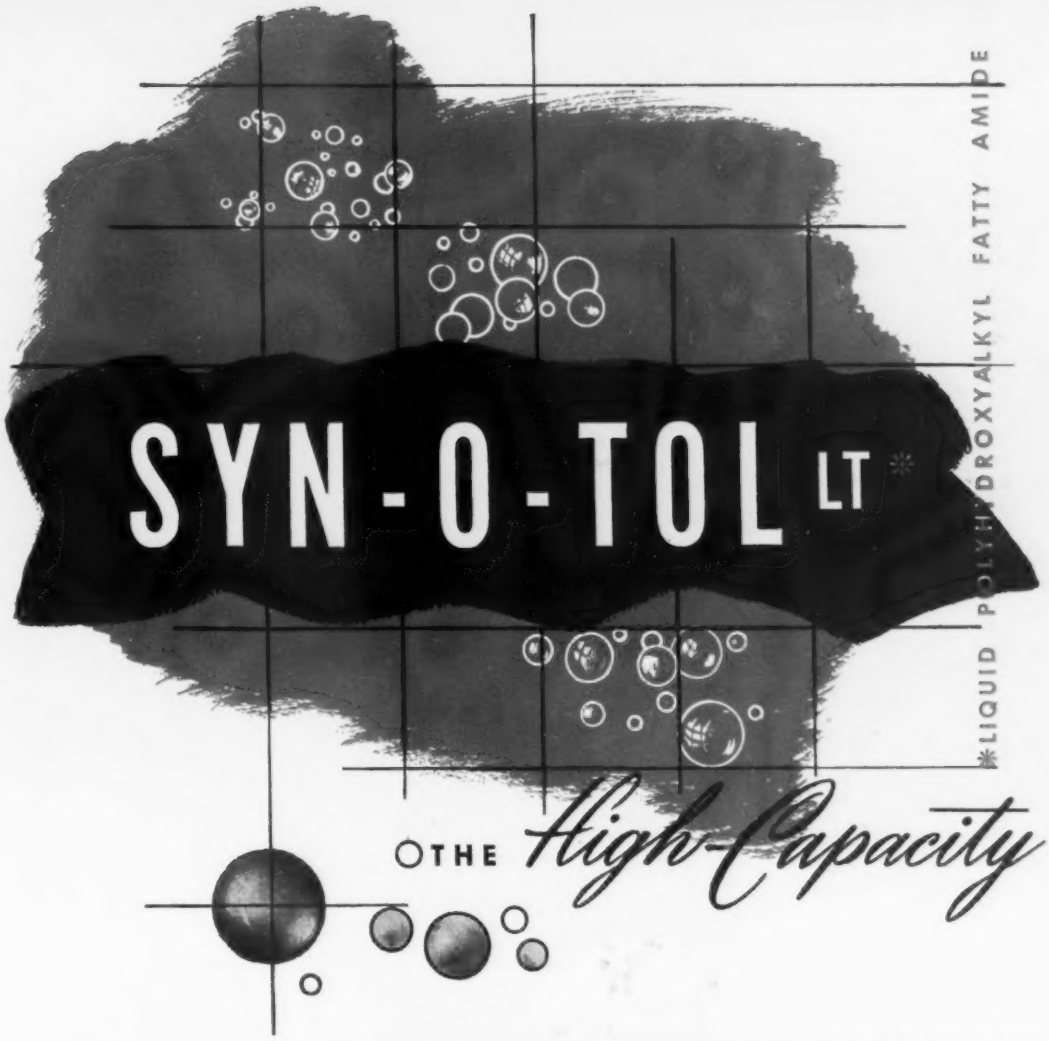
Go National for Lead

. . . pipe . . . valves . . . sheet . . . lead-lined or lead-covered equipment . . . even complete acid recovery plants. Behind every National Lead recommendation, every National Lead product, are years of experience and many important installations in every field handling corrosive liquids and gases.

NATIONAL LEAD COMPANY

111 BROADWAY, NEW YORK 6, N.Y.

Offices and Plants in Principal Cities
Pacific Coast: Morris P. Kirk & Son, Inc., Los Angeles
Canada: The Canada Metal Company, Ltd., Toronto



THE *High-Capacity* DETERGENT

FOR ALL WET CLEANING OPERATIONS

E. F. DREW & CO., INC.

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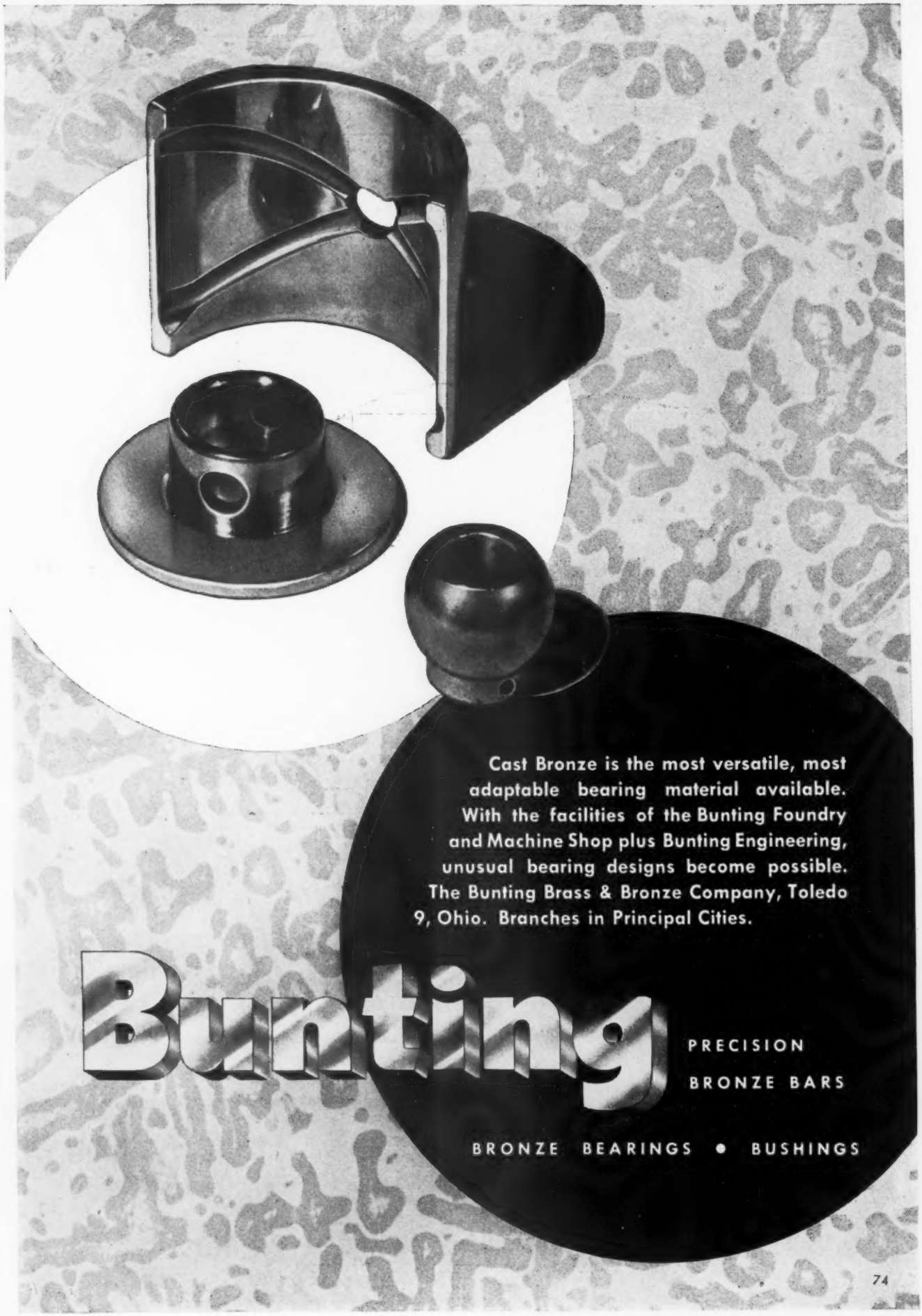

Cast Bronze is the most versatile, most adaptable bearing material available. With the facilities of the Bunting Foundry and Machine Shop plus Bunting Engineering, unusual bearing designs become possible. The Bunting Brass & Bronze Company, Toledo 9, Ohio. Branches in Principal Cities.
Bunting
PRECISION
BRONZE BARS
BRONZE BEARINGS • BUSHINGS
74

PYROTEX

SCOURING AGENT

PYROTEX is a most effective scouring agent having excellent wetting out properties which assure immediate scouring action.

PYROTEX can be used in scouring and dyeing of wool, worsted, rayon, acetate, cotton and nylon.

PYROTEX not affected by acid, alkali, or hard water, and will not precipitate or form scum.

PYROTEX, being neutral, is very adaptable for dyeing of acetate and mixtures thereof.

PYROTEX can be used alone or with soap and alkalies. In scouring of woolens and worsteds for piece goods dyeing, it is extremely important that goods be thoroughly free from fats which may cause shaded or cloudy goods. However, this is not the case with PYROTEX. Even though not thoroughly washed out it will assist in dyeing.

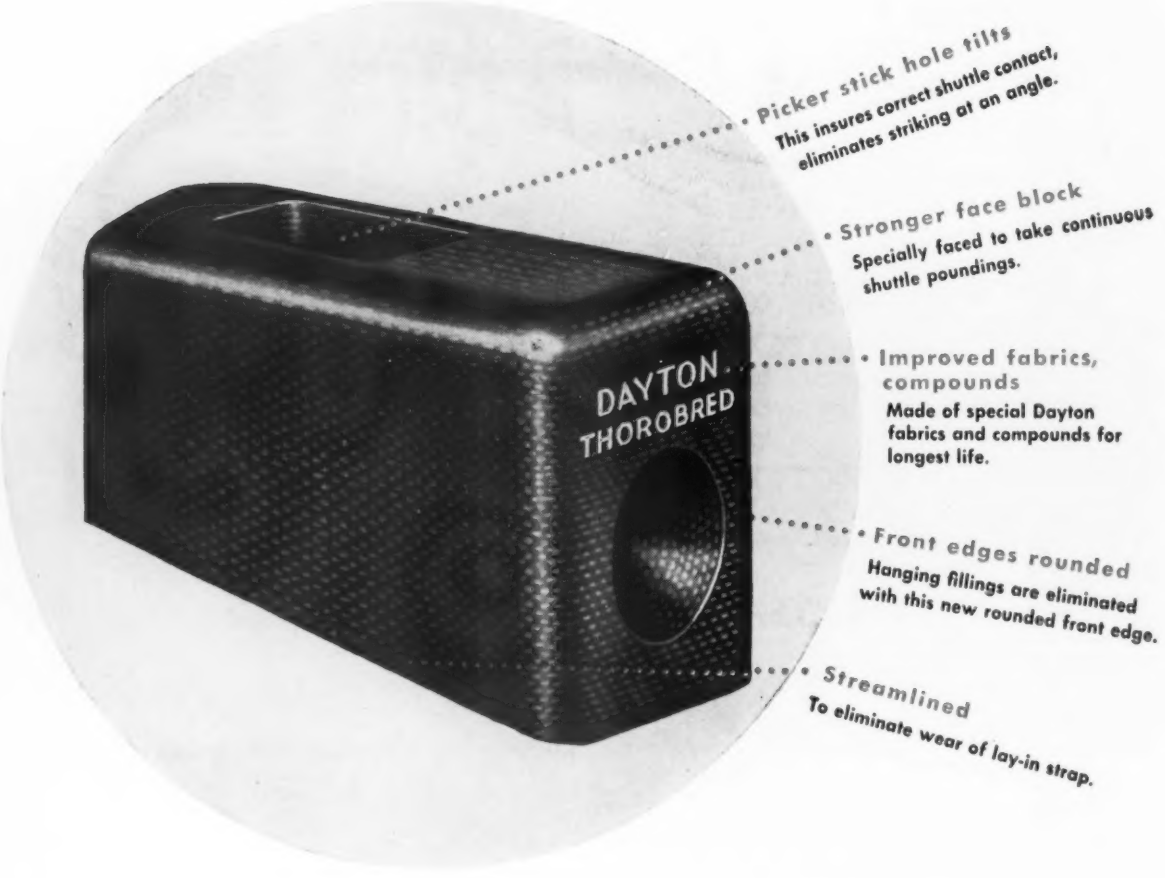
STANDARD CHEMICAL PRODUCTS, Inc.

1301 JEFFERSON STREET, HOBOKEN, NEW JERSEY

HIGH POINT, N. C. · LEAKSVILLE, N. C. · PATERSON, N. J.
CHATTANOOGA, TENN. · PROVIDENCE, R. I. · SACRAMENTO, CAL.

Reduce maintenance costs . . . get better service from this

NEW *improved* PICKER


DAYTON
THOROBRED
Picker stick hole tilts
This insures correct shuttle contact, eliminates striking at an angle.
Stronger face block
Specially faced to take continuous shuttle poundings.
Improved fabrics, compounds
Made of special Dayton fabrics and compounds for longest life.
Front edges rounded
Hanging fillings are eliminated with this new rounded front edge.
Streamlined
To eliminate wear of lay-in strap.

On today's fastest looms, Dayton Thorobred Loop Pickers perform with highest efficiency at less cost. Made of special fabrics and synthetic rubber compounded with unusual resilience, Dayton Pickers are molded in one-piece, super-strong units that give increased service, longer life. Designed with a flared bottom, Dayton Pickers are built for easy application. There is nothing to break, nothing to expand. Their design includes a specially patented symmetrical loop construction which anchors the picker onto the stick and holds it in the correct contact position indefinitely. If you aren't using Dayton Pickers, it will pay you to get the complete story. Write Dayton Rubber, Dayton, Ohio, or *Textile Division—Main Sales Office, Woodside Bldg., Greenville, South Carolina.*

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Only a Prosperous America Can Be Free

DURING May 50 million American workers will get from the Congress of the United States a real incentive to work.

This incentive is called a tax cut. Beginning May 1, the withholding tax on incomes will be reduced, giving everyone a much-needed increase in take-home pay.

But the tax cut will have a far more important effect. It may be literally a life-saver for American employment and production — and, hence, for the stability of the world. It will help to do two things which must be done if our economy is to continue to furnish good jobs and good earnings.

1. *It will generate part of the private funds for investment in common stocks — the "risk capital" which we need to sustain prosperity.*

2. *It will provide part of the incentives necessary to make American business management still more effective.*

These two predictions are not advanced as matters of opinion. They are based on facts reported by McGraw-Hill field editors.

These facts show why the reductions in upper bracket income tax rates are most significant for our continued prosperity. For the first time in more than twenty years the tax burden on people who can afford to risk their savings has been lightened. To find out what this will mean to the economy, McGraw-Hill field editors all over the nation asked a group of business executives making $15,000 a year or more how they will use the money which the tax cut gives them. Here is what they said:

1. They plan to save — not spend — three-fourths of the money they keep as a result of tax reduction.

2. They plan to invest one-half of these savings in common stocks. If all persons making over $15,000 follow this pattern, they will make available about a half billion dollars of risk capital for American industry.

WHAT THE TAX CUT WILL DO

What will upper bracket taxpayers do with their tax savings?
What can business expect as a result?

TO ANSWER THESE QUESTIONS, McGraw-Hill field editors interviewed a carefully selected sample of business executives earning $15,000 a year or more. Here, for the first time, are solid facts that show how tax reduction will effect the supply of risk capital and business incentives. These are the results:

1) How much of your tax reduction will you save? 74%

2) How much of your tax savings will you invest in common stocks? 52%

3) Will lower taxes lead you to switch some of your investment in bonds to stocks? Yes 28%

4) Have you passed up an opportunity to invest in a new business in the last five years because the return after taxes did not justify the risk? Yes 40%

5) Will lower taxes make you more inclined to take a risk on a new business? Yes 80%

6) Have you turned down the opportunity to take a bigger job in the last five years because taxes would take too much of the additional income offered? Yes 13%

7) Do you know of actual cases of executives who have turned down bigger jobs or more work because of taxes? Yes 38%

8) Will lower taxes make you more inclined to take on a bigger job or more work? Yes 59%

3. They also will switch some of their present savings from bonds and bank accounts to common stocks. This might easily add a billion dollars or more to the supply of risk capital.

The one-half billion dollars of tax savings and the funds switched from other investments into common stocks is not enough to end the shortage of risk capital. But it is a start.

Before passage of the tax law, risk capital had been growing increasingly scarce.

One measure of the scarcity is that last year only four-tenths of 1% of national income went into new common stocks. In 1925, a year of normal prosperity, almost 3% of national income was invested in new common stocks.

Another measure is that between 1940 and 1947 people actually reduced their holdings of corporate stocks and bonds by nearly a billion dollars. During the same period, people salted away almost $150 billion in such safe havens as cash, bank deposits, and government bonds.

This drought of risk capital hit us just when we need a vastly increased flow of risk capital to finance the expansion and improvement of our American productive machine. We need risk capital to search for new oil fields and to build new pipelines and refineries. We need capital to expand our over-loaded electric and gas utilities. We need it to finish re-equipping our airlines and railroads and bus lines. We need it to modernize our textile production. We need it to keep pace in the magical, booming chemical industries. We need it to launch the new industry of television.

We need capital for all this work and for much more besides. And we must do all this work if we are to keep the United States dynamic and if we are to create new and better jobs.

The tax cut comes just in time. As the last editorial in this series showed, the flow of risk capital must double or triple if we are to avoid a cutback in industrial expansion next year. A major reduction in industrial expansion because of a shortage of risk capital would menace our prosperity. Whenever capital expansion has sagged, the whole economy has sagged. That is the record. That is why every American has a crucial interest in breaking the shortage of risk capital.

The tax reduction now going into effect helps relieve that shortage. In my opinion, we need still other tax changes to assure enough risk capital for healthy industry and healthy employment.

We should encourage the rapid depreciation and replacement of plants and equipment to keep America efficient.

We should eliminate the double taxation of stockholders' incomes.

We should permit full averaging of good years and bad in calculating income tax payments.

We should cut tax rates again as soon as we can.

The tax cut of 1948 will prime the flow of capital. We must keep it flowing.

The tax cut also encourages our successful men and women to work harder and more effectively.

The McGraw-Hill editors collected some solid facts to show how seriously heavy taxes have discouraged business leaders. Here they are:

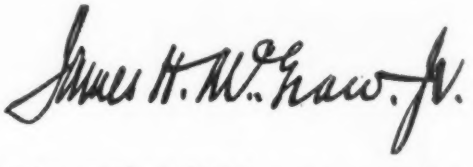
1. One out of seven persons the editors questioned said that they had turned down positions with greater responsibilities because heavy taxes would take most of the greater pay that went with the harder job.

2. Six out of ten executives would be more inclined to accept a more responsible job now that taxes will let them keep more of the added pay such a job would bring.

We all have a stake in incentives which make men work harder, especially talented men. The more we each work, the more we all have.

The tax reductions so far made will leave the government more than enough revenue to meet all its expenses, including the proposed defense expenses, and still reduce the national debt. If more defense money becomes necessary, vigorous economy on less essential government expenses will make possible both stronger military defenses and a better tax system. We need both.

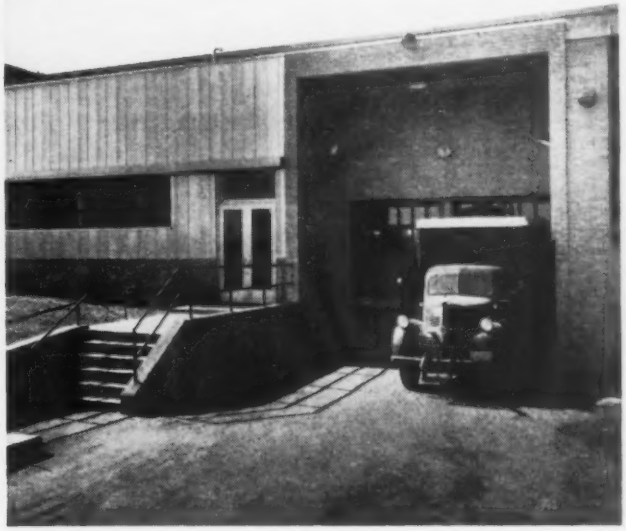
Only a prosperous America can be strong enough to remain free—and to help keep the rest of the world free.



President, McGraw-Hill Publishing Company, Inc.

The unnamed plant on TEXTILE WORLD's February cover, which stimulated a flood of inquiries, is the new weaving plant of F. Ducharne Silk Co.

Fluorescent lights in continuous troffers provide an average of 55 foot-candles throughout the working area.



The loading platform is set into the wall for protection of shipments in inclement weather.

A QUALITY PLANT

Erected for Quality Fabrics

HIGHLIGHTS: *Pleasant exterior and interior atmosphere of Ducharne plant favorably affects employee morale and efficiency—Complete air-conditioning units mounted near ceiling serve individual areas—Modern structural materials effectively combined for beauty and utility—Interviews reveal enthusiasm of workers.*

By WILLIAM A. NEWELL
Assistant Editor, TEXTILE WORLD

TIME WAS WHEN SOME PEOPLE in the town of Glen Rock, N. J., wanted no part of any textile mill in their fair suburb. But today they point with pride to the town's best looking building—the new weaving mill of F. Ducharne Silk Co.—as 1,200 workers compete for the 150 jobs it provides. The reasons: (1) A skillful combination of architecture and engineering has produced a plant of un-

Beauty and utility are achieved . . .

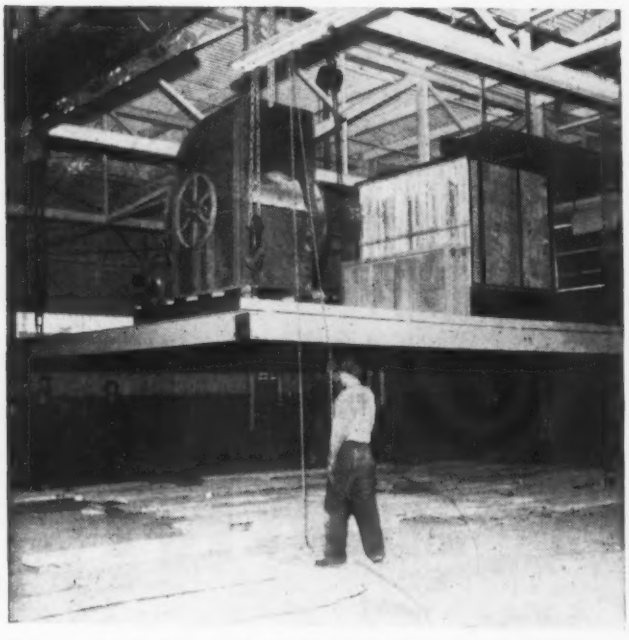
NOT A SWANKY SHOP

. . . but a swanky textile mill. Floodlights silhouette the plant's name at night.

NO UPKEEP HERE

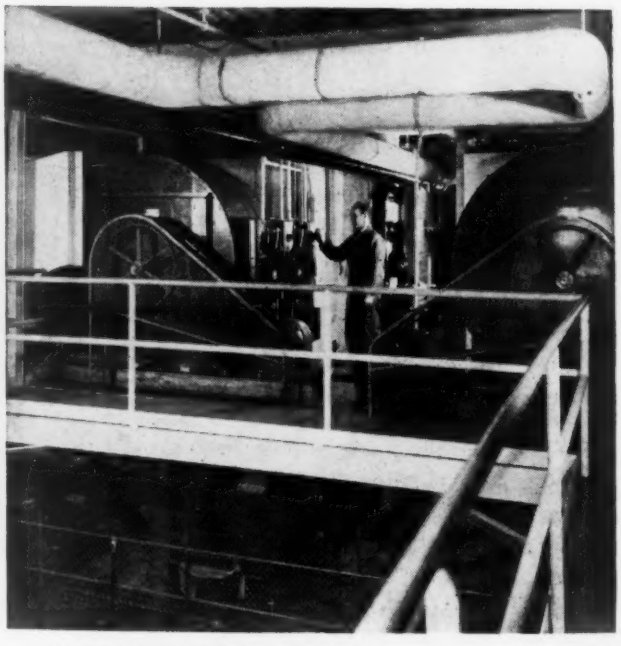
. . . because aluminum panels provide the attractive exterior face of the siding.

. . . by combining modern materials and methods.



PRE-ASSEMBLED AIR-CONDITIONING EQUIPMENT . . .

A $3,000 saving was made by assembling equipment on a platform on the floor.



. . . WAS RAISED INTO PLACE

Raised equipment platform is accessible by catwalks extending across the mill.

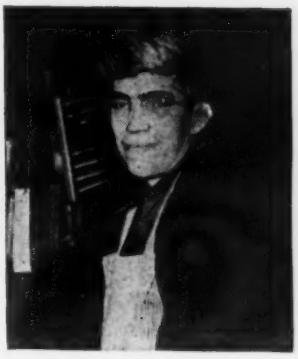
usual beauty with many unique engineering features; (2) the mill's exterior and interior atmosphere, combined with sound management, has raised employee morale and bettered community relations.

To anyone who approaches—whether visitor or employee—the mill resembles more closely a swanky Fifth Ave. shop. Two glass doors which open into an interior lobby are flanked by maroon marble slabs set deeply for weather-protection into a marquee of limestone. Above the marquee, in 2-ft. maroon metal letters is the name, F. Ducharne, mounted in front of a backwall of limestone blocks. At night, floodlights illuminate the stone background and silhouette the letters. To both sides of this two-story entrance are the walls of the offices and various specialized rooms—faced with vertical panels of aluminum. A 2½-ft. band of continuous sash in this office section carries out the horizontal glass block and Thermopane window line in the plant area.

The beauty of the plant is more than skin deep. Processing equipment is set in a large room divided into 2

Can a building build morale?

Picker Edith Zabriski:
"The surroundings make the work seem easier."



Weaver Pasquale Lerro:
"It's sanitary and clean. Better for me than other mills."

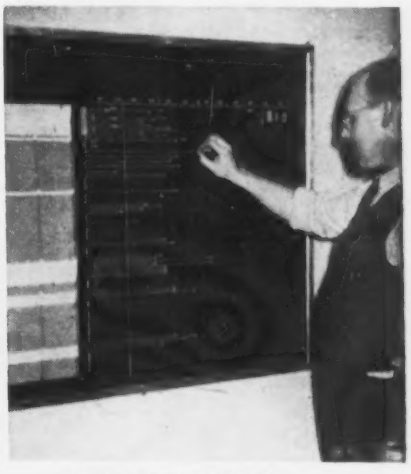
Winder Emma Young:
"It's a pleasure to come to work —some of us arrive early."

General Manager Stauber:
"Workers are proud of their mill, enforce sanitary rules."

Can modern office equipment aid production?

PLEASANT OFFICE CONDITIONS AID . . .

Modern office equipment and machines help speed work and fit the atmosphere created by the continuous window, acoustical ceiling, and sunken-troffer lighting.



. . . PRODUCTION CONTROL

A control board allows visual checking on status of product.

Can cleanliness and neatness be encouraged?

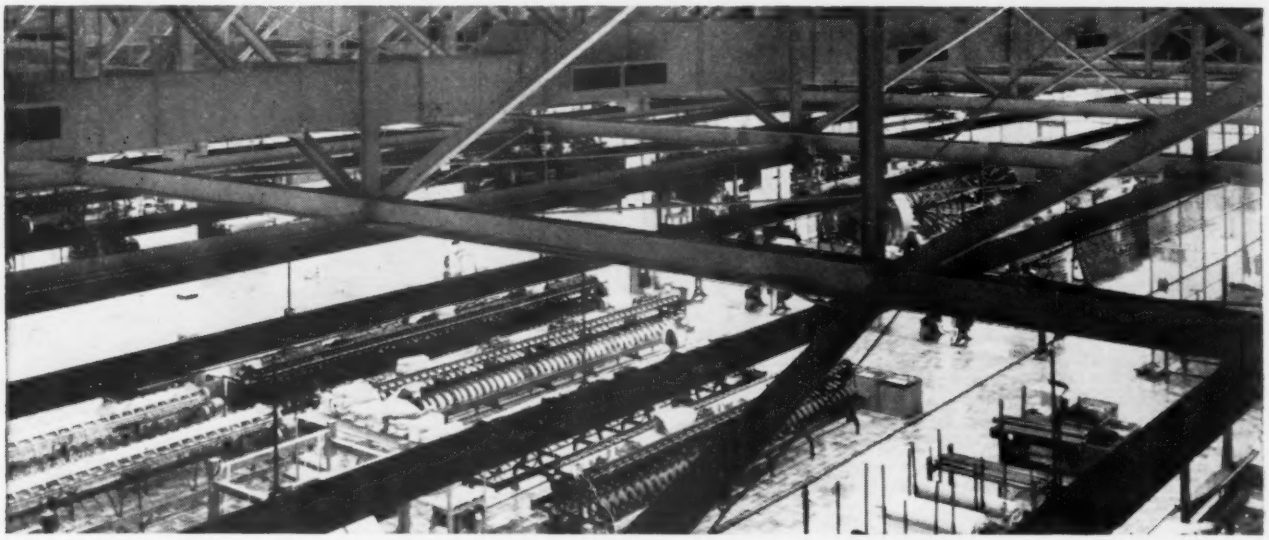
NO WEAVERS DIRTY HANDS

Washfountain in the women's two-tone, pink-color washroom is used by Mildred Amoresano.

PARTITIONS PROVIDE FLEXIBILITY

Movable wire partitions keep one department from overflowing into another.

Sound engineering plus sound management efficiency



SIMPLIFIED CONSTRUCTION

Use of standard H-section welded trusses simplified construction problems and eliminated much purchasing detail. Air-conditioning equipment, built into the structural framework, saved floor space normally required.

HOT MEALS ON LOCATION

The employees' lunchroom located off the main room provides a convenient, clean eating place during lunch and rest periods.

NO GREASY FLOORS UNDER LOOMS

A metal plate under each loom protects the floor and eases maintenance. Floor is maple, parquet type.

PARTS ARE STORED NEATLY

A rack built over each fixer's bench provides neat storage for extra parts.

unobstructed bays 80x160 ft. with 17-ft. clearance. Color-conditioned walls of tan and cream are enhanced by fluorescent lights in continuous troffers—delivering an average of 55 foot-candles to the working levels—and by a parquet floor of maple.

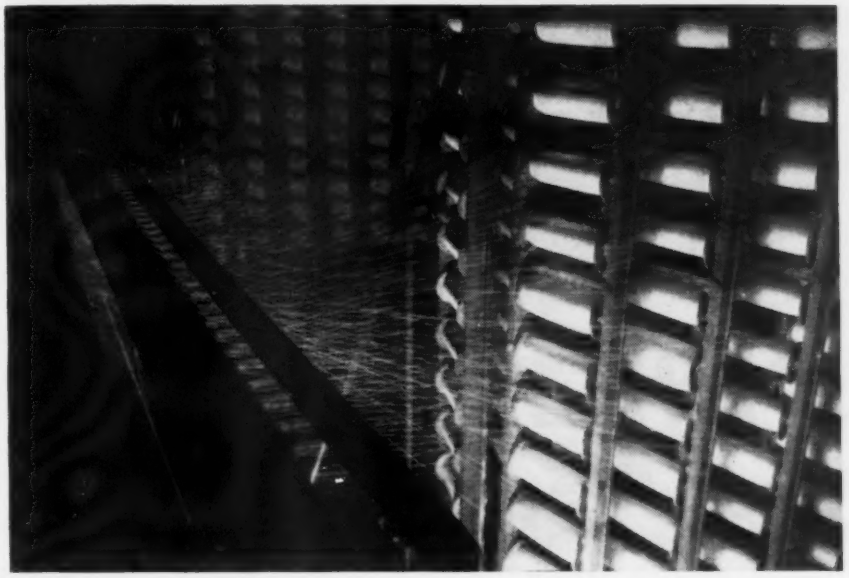
FOR EMPLOYEE COMFORT. Facilities for employees include modern, color-conditioned washrooms equipped with lockers and Bradley washfountains and a lunchroom in which employees are served coffee during rest periods and at lunch time.

Offices are separately air conditioned by a unit mounted in the only 2-story section of the building, the entrance. Offices have asphalt-tile flooring and acoustical-plaster ceilings with recessed fluorescent lighting.

The employee lunchroom, locker

(*Continued on page 234*)

Crepe Warping Techniques Are Applicable to BEMBERG



Loss pins *are recommended for use with long bobbins such as these when warping crepe yarns.*

HIGHLIGHTS: *Loose creel pins recommended—Separate warpers best for S and Z twist—Rebeaming tension is compromise between ends rolling and breaking.*

By JOHN GASSMAN
Bruck Silk Mills, Montreal, Canada

WARPING BEMBERG* CREPE on the cotton system of low-speed warping requires some special techniques as well as particular attention to equipment. [For equipment details see TW Feb. '48, p. 116.] The operation, in general, follows that used in warping any crepe yarns containing both S and Z twists. Principles given here are specifically for Bemberg crepe, but can be applied to other hard-twisted yarns.

Fixed pins can be used in the warper creels, but for best results the spools should be put into the creel by inserting skewers and placing them into porcelain bearings.

Normally, the ends are drawn, one by one, through the faller eyes and guides, around the upright guide-rods, through the leasing-comb, around the guide and compensating rollers, through the drop-wires, through the zig-zag comb and then onto the beam. To prevent the ends from looping around the guide wires on the creel, a strong twine is strung from wire to wire vertically on each row of the upright bars.

It is important that the ends should not be crossed at any time. A perfectly straight creel is necessary to insure properly made section-beams. The equipment should be checked daily by the supervisor, especially for crossed ends.

The yardage of the yarn to be wound onto the section beam is determined by the amount of yarn on the spool. If an 8-oz. spool is used, the warper can be run approximately 20,000 yd.

As far as possible, only full spools should be creeled in, since small spools will run out earlier and must be replaced. It is well to be sure that full spools are not spotted into the creel with the "skinny" spools, as streaky cloth can result.

When a section beam is ready to doff, an end-for-end lease should be taken by means of the leasing comb. This lease is run onto the full beam, and a 3-in. paper tape is glued on the yarn. Then the beam is tied up and doffed, and a new one is mounted.

After a few rounds of yarn are run onto the new beam, the spools in the creel can be replenished. As the run-down spools are taken off and the new spools set in, the ends from the old spools are tied to the ends from the new, full ones. When creeling is completed, the knots are carefully pulled through the combs and wires; and the warper is ready to start anew.

The "skinny" spools from the old creel can be redrawn to make full spools. These spools can be spotted into a full creel toward the center of the warp; the knots give less trouble in the center of the warp than near the edges. Or, the small bobbins can be filled by the redraw operators. Care should be taken by redraw operators to tie flat (weavers') knots, preferably by a mechanical hand knotter.

It is of utmost importance that the section beam be built as level as possible. High edges will create slack ends in rebeaming, and therefore will cause rolling. Low edges will cause tight ends and breaking in the rebeaming. Ridges on beams can cause rolling and tangling of the yarn.

Should an end become lost in warping, it is well to insert a small paper tab where the new end is put into the warp. This will warn the rebeaming operator to catch up the lost end. However, at all times, the stop-motions should be kept in good working order; and the operator should try to tie each broken end to prevent a great deal of trouble in rebeaming.

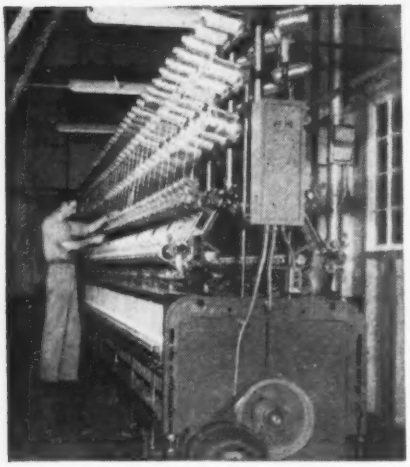
It is advisable to have two warper heads and creels, one for the S-twist warps, one for the Z-twist warps. Tying S-twist ends to Z-twist ends is not advisable in recreeling, as the opposite twists will cause the ends to roll and the knots will not pull through the combs and wires properly.

REBEAMING. For the safety of the rebeaming operators, it is advisable to use a chain-hoist for lifting the beams into the beam-creel bearings.

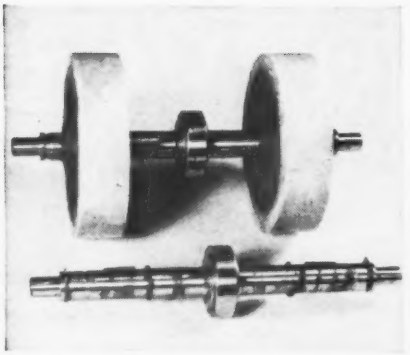
The beams are mounted in the

(*Continued on page 190*)

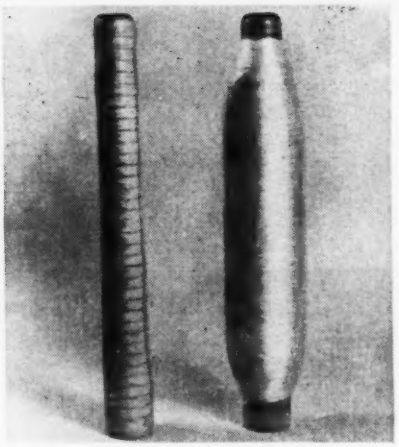
* Bemberg is the trade-marked name of American Bemberg Corp. for its cuprammonium-process rayon yarn.



Direct spinning of rayon from continuous-filament tow in one operation is made possible by this new frame.



The front top roll has the general appearance of a worsted top roll. Below is the chassis of the back top-roll with cots removed. The tension bar rests upon the center ball bearing, and the tips of the rolls are inserted into nylon support-bearings.



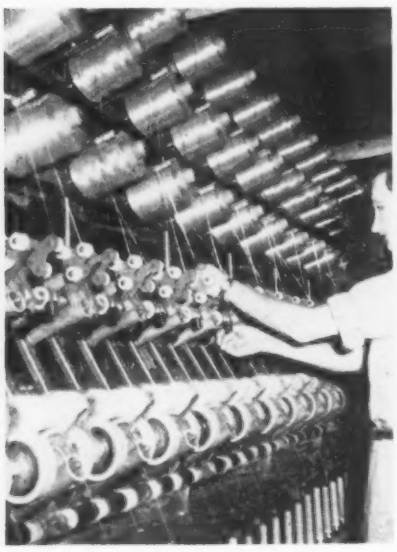
High strength, smooth, yet slightly fuzzy appearance are interesting characteristics of direct-spun yarn. On a 10-in. bobbin, the stroke on 20s yarn is about 8½ in.

DIRECT SPINNER for Tow Produces Fine, Strong Yarn

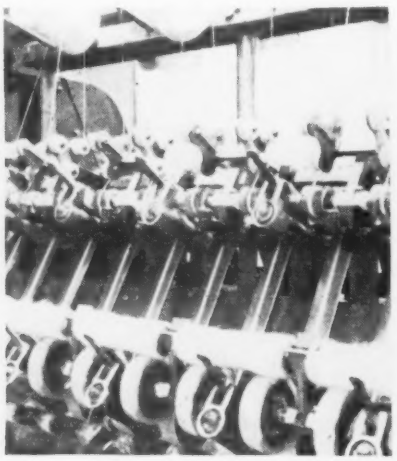
HIGHLIGHTS: *New Saco-Lowell machine under test in several mills—Yarn counts produced directly from tow range from 20s to 80s—Yarn has greater strength, lower elongation—Characteristics expected to open up new fields of fabric development.*

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

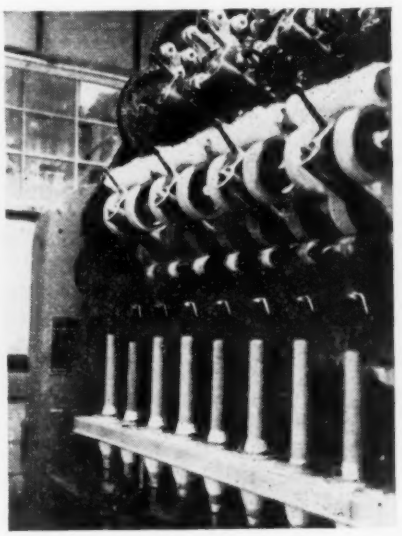
A NEW TYPE OF RAYON YARN is being spun directly from continuous filament rayon tow in a number of textile mills in different locations. Counts from 20s to 80s have been spun experimentally, and development by mills is continuing in cooperation with the manufacturer of this latest direct spinner, Saco-Lowell Shops. It is indicated that the machine will open up fields for a yarn heretofore impossible to manufacture by conventional methods. This new yarn poses technical problems in raw-material supply, production, and marketing that



In creeling tow, the operator runs the material around the three tension guides, then around the top roll.



Tow travels around tension guides, passes over the 2-in. synthetic-rubber top roll and into the bite of that roll and the bottom steel-fluted roll. From the steel roll, the tow emerges onto traveling single-belt apron where it is broken and is carried to the delivery rolls.



The drafted fibers pass between the two bottom delivery rolls. The top roll is synthetic-rubber covered, the lower is fluted steel.

do not appear to have ready-made answers. The practical aspects of these answers are being worked out on a day-to-day basis by mills despite short supplies of the special tow processed by the machine.

Progress made by one mill has been noteworthy. This mill creels 5-lb. tubes of continuous-filament tow upon spike creels that resemble twister creels. The tow is broken by drafting into spinnable fibers of varied length and is then twisted and wound by means of conventional ring and traveler. The process makes attractive yarn in one operation and eliminates all opening, picking, carding, drawing, roving, and conventional spinning processes. The mill believes that the resulting yarn does not imitate any existing yarn on the market today, and expects it to find its own market potential, a factor that accounts for the considerable efforts in the twisting, weaving, and finishing tests now underway.

HIGH STRENGTH. While all physical characteristics of the yarn are not yet known, it is known to have great strength. The mill reports that direct-spun yarn breaks almost twice the figure for equivalent cotton yarn based upon Draper standards. However, this approximate strength comparison errs, if anything, in favor of the direct-spun yarn, since only yarns with minimum twists (filling twist usually) have been run at this particular mill. The yarn is regular, has fine appearance, and possesses a sheen that seems possible only with filament yarns. Because the lengths of fiber broken vary, the yarn has a characteristic fuzziness that is more noticeable than that of cotton. The mill states that this fuzziness can be controlled by ply twisting, or possibly eliminated at the finishing mill.

The contraction in the new yarn is high and not possible of estimation at this time. When knitted into socks, the shrinkage (after finishing) was considerable; a characteristic somewhat similar to that of wool. During twisting and weaving, the contraction was more than that encountered on conventionally spun yarns.

One New England mill, spinning 20s to 50s from 4400-den., 1½-den.-filament tow reports that yarn produced has a breaking strength approximately 30% higher, and an elongation approximately 55% lower than the equivalent count of spun rayon yarn.

FINE COUNTS. In overcoming these and other problems as they present themselves, the mills emphasize that the final result may well be a new yarn that will supplement rather than replace existing yarns. One mill using the spinner is said to be making counts as high as 100s, and the mill believes that this increase in the range of fine counts from synthetic yarns will be one of the most important contributions of the direct spinner when all the technical, marketing, and raw-material problems are worked out.

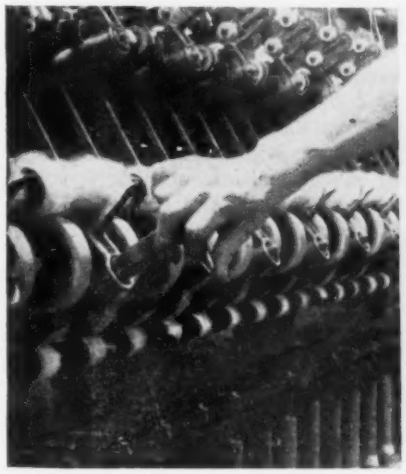
Fine counts are being spun directly from tow on rings that are larger than those normally employed in cotton-type ring spinning. Filling-twist yarn of 60s count is being direct-spun on 2¼-in. rings from 4400-den. tow that contains 1½-den. filaments. If this practice continues as a standard one, there may be many more economies in the direct spinner than appear on the surface. For example, one mill reported that the direct spinner (on 60s yarn) ran about three shifts or 19.2 hr. before doffing. The 5-lb. tow creeled in the machine ran 7.6 days of two-shift operation before being re-creeled. A machine on 20s ran 6.5 hanks per shift, produced 68 lb. of yarn per frame in 8 hr., doffed a 4.2 oz. bobbin of direct-spun yarn that ran about 7 hr. per doff.

The weights of tow experimented upon by the mills vary, but 4400-den. tow is presently considered to be a practicable weight. The denier is varied by 1100-den. increments, and it is possible that a variety of weights and fibers may be available for direct spinning in the future.

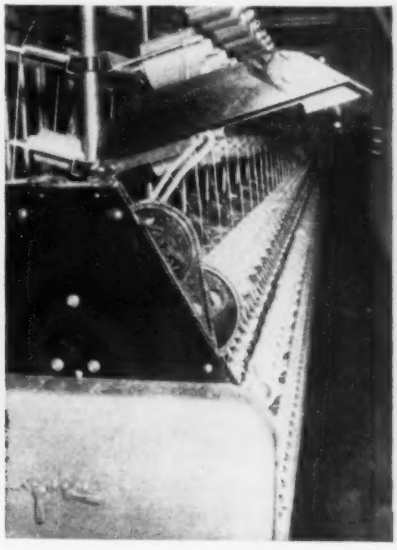
However, one mill which is now experimenting with the direct spinner states that tow is in extremely short supply. The 4400-den. tow costs about 55¢ per lb.—heavier tow costs less per pound, lighter tow costs more per pound.

The Saco-Lowell direct spinner has 102 spindles per side and two start-stop switches. To reverse yarn twist, the direction of the motor is reversed and an adjustment is made in the head end of the frame so that feed and delivery rolls will turn in the proper directions. Waste collection is by conventional scavenger rolls. Bobbins are tip driven from wooden-sleeve spindles. On 20s yarn, one mill used a No. 8 traveler, ⅞ circle, No. 1 flange. The machine's ring rail is magnesium.

Piecing an end on the direct spinner is slightly different from that on a conventional cotton ring-spinning frame. The operator picks up loose tow after he has threaded traveler and guide wire, pulls the tow away from the bite of delivery rolls with one hand, while with the other he twists end in piece-up.



Pressure for breaking and drafting tow is regulated by this T-wrench which fits into disk top of tension mechanism. Turning T-wrench right, the operator adds to the pressure on the roll. Turning left, he decreases it.



Simple drives are located on the direct spinner for powering the two-roll drafting and breaking system.

Changing draft gears on the direct spinner is simple. Here the operator is about to take up on the adjustable sprocket tension which permits a change of gear sizes to be made quickly.

Functions of a Good Personnel Program

1. Formulate principles of procedure.
2. Develop techniques for recruiting, selecting, and placing employees.
3. Collect information on the requirements of jobs.
4. Specify requirements for placing employees in these jobs.
5. Set up rules and practices for the promotion of health, comfort, and safety of employees.
6. Stimulate interest in the job and company.
7. Cultivate good will through management-employee conferences concerning physical conditions of work, hours, and wages.
8. Develop opportunities and facilities for executive and employee training.
9. Construct systems of transfer and promotion.
10. Create machinery for hearing and adjusting grievances.
11. Formulate rules for conduct and discipline.
12. Provide a plan for handling dismissals which will assure justice and safeguard the interests of both the company and its employees.

Note: Rules taken from Watkins & Dodd, Management of Labor Relations.

TELL YOUR EMPLOYEES About Mill and Industry

By T. M. FORBES

Executive Vice President, Cotton Manufacturers' Association of Georgia

HIGHLIGHTS: *Handling people is a function of both top management and operating executives—Four yardsticks measure success of labor-management-relations program—Pride is keynote of success.*

HANDLING PEOPLE is a term every overseer and superintendent is familiar with. It means simply the manner in which people at work in a mill or in a department are organized and treated. There is more to it than hiring and firing, handling grievances, or having enough spinners to run all the frames on the third shift.

Every carder and spinner knows that the production and efficiency of his department depend directly upon his human resources. Every mill manager knows that the competitive position of his company also depends directly upon his human resources.

One of the major objectives of every textile mill, therefore, is to organize and treat its individuals in such a way that the greatest possible realization of their abilities will be attained.

Abstract of an address before the Textile Operating Executives of Georgia.

For lack of a better term, let us call this objective the aim of the mill's personnel administration. It is not an activity confined to the established personnel department. It must be a broad program. It must cover all activities, contacts, and relationships between employers and employees. It must cover everybody in the organization from the president to the sweeper. It applies to every superintendent and every overseer as much as to a slubber tender or spinning doffer.

YARDSTICKS. Such a program requires a numer of phases, but the success of each phase can be measured by four common yardsticks:

1. Does it aid in employing competent people?
2. Does it improve productivity of the individual?
3. Does it contribute to sound, fair, mutually satisfactory management-labor relations?
4. Does it aid in retaining good employees, reducing labor turnover?

With these measurements in mind, let us consider one specific phase of personnel administration in which the major responsibility rests upon the superintendent and overseers. This phase can be called instilling pride in the employee. It should include pride in his work, pride in his job, pride in his bosses, pride in his company, and pride in the industry.

The job is primarily one of passing on educational information. It is true that in the past the textile industry, particularly the cotton mills, ranked low as a desirable place to work. Wages were low, compared to wages in other industries; hours were long; living conditions were bad; the economic and cultural status of mill workers was lower than that of the employees of other industries. In short, there was a certain stigma attached to working in a mill which seemed to set the worker apart economically, socially, and culturally. This condition developed a sort of inferiority complex.

All of the factors that contributed to such a condition have been removed. All of us here know it. But the job of

TEXTILES—
America's Second Largest Industry

Having:
3,670,000 installed horsepower
and
744,529 electric motors
located in
6,203 establishments
employing
1,165,384 men and women
who receive
$1,134,099,535 in wages and salaries

Each year, the industry pays
$1,996,856,986 for materials and supplies
plus
$46,555,985 for fuel
plus
$54,004,847 for electric power
plus
$28,454,425 for contract work

removing the stigma from the minds of the worker and the public has not been completed. Until we complete the job, the industry will continue to be exploited by professional men and groups who profit by sensationalism and warped exposés. Further, a ready supply of labor—particularly from families already in the mill community—will not be available.

KIND OF INFORMATION. What educational information can superintendents and overseers pass on to employees to aid in instilling pride? Here are some of the reasons why a worker, or a superintendent, can be proud of the textile industry.

In the first place, the textile industry is a basic industry. It provides two of the three essentials of mankind—clothing and shelter.

Thirty-eight percent of all the textile goods manufactured in the United States goes into clothing; 25% goes into household uses (sheets, pillow cases, blankets, towels, etc.); 37% goes into industrial uses (automobiles, furniture, belts, water hose, bags, etc.).

Such information should be passed on to employees. They should be reminded frequently of the essential nature of their work and the products of their work.

In the second place, tell your employees that the textile industry is the oldest industry in the world. One of the first things that marks the transition of man from a savage to a civilized state is the development of clothing and shelter. Excavations have uncovered fine textile fabrics placed in tombs in China and India as far back as 1500 B.C.

In the third place, the textile industry is one of the largest basic industries in the United States. In 1939, the textile-manufacturing industry employed 1,163,000 people—more than any other industry in the country. At that time the industry ranked fourth in the value of goods produced.

TEXTILE INDUSTRY LEADS. To bring the matter right down to Georgia, you can tell your people that the textile industry is the largest industry in the state. There are more than 200 plants engaged in spinning, weaving, knitting, or finishing textile fabrics. With some 3,200,000 spindles, Georgia ranks third among the states in the number of cotton spindles and second in cotton consumption (exceeded only by North Carolina). Some 100,000 workers are employed. Thus, the textile workers and their families and dependents constitute one-sixth of the total white population of Georgia. The second largest industry—lumber—employs only 35,000 workers.

The payrolls in the textile industry are the largest in the state. In 1946, $190,000,000 was paid out in wages. The second largest payroll of an industry—the food industry—was $47,000,000.

The textile mills pay more taxes than any other industry in the state. Impress on your workers that their industry contributes more than any other group to the activities of education, health, welfare, social security, and all other governmental functions.

And a particular point of pride that we should capitalize is the fact that wages in textile mills compare favorably with those in any other industry where comparable skill, education, training, and experience are required. In many instances, white-collar workers in the mill community make much less money than mill workers.

Other points that should be brought to the attention of the employees are the improvements in working conditions; housing; schools; facilities for health, recreation, and adult education; group insurance; vacations; etc. Much should be said also about the research and technical-education activities of the industry. The textile industry is no longer a hit-or-miss industry operating by "averages"; it is a technical and scientific industry. Millions of dollars are being spent by the industry to improve methods, machinery, quality of goods, and marketing.

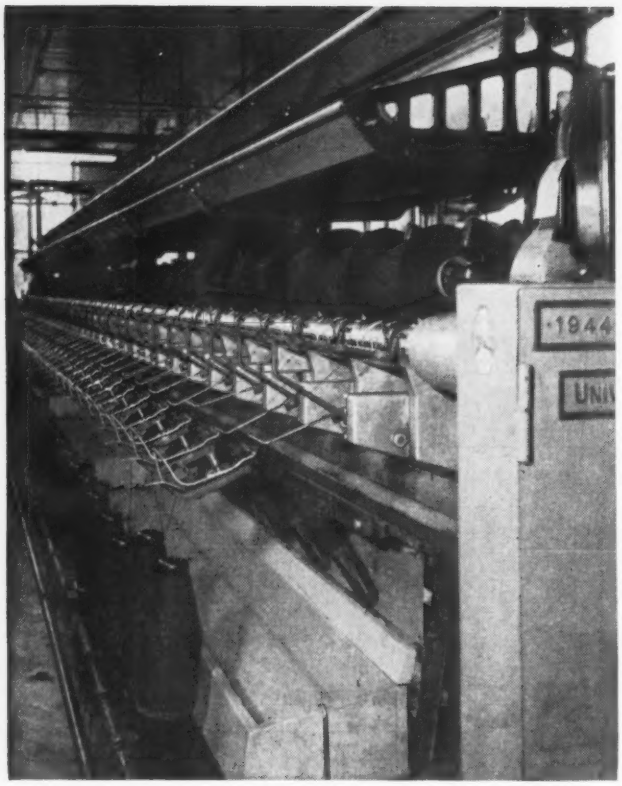
WHO IS RESPONSIBLE? Now the question comes as to who is responsible for passing along this type of industry-education and company-education information. Of course, it is the responsibility of everyone in the organization who has any degree of authority—the president, superintendent, foreman, and assistant foreman.

First of all, we must have the information ourselves. The time is past when a boss is only a boss; he must now be also a teacher, and the information he passes along must be more than just technical "know how." Armed with the information, we must feel strongly about it. We must believe in our industry, our company, our jobs. We must first have pride before we can instill it in others.

Top management and operating executives have got to earn the confidence, respect, and admiration of the people they work with. They must organize and treat people so that the people on the jobs will be proud of them, the company, plant, product, working conditions, policies, and practices.

If such a pride is instilled, what will be the results? Undoubtedly these results will be obtained:

1. Productive efficiency will be increased.
2. Absenteeism will be reduced.
3. Labor turnover will be reduced.
4. Labor can be recruited in the community.
5. Quality of product will be increased.
6. And one of the finest results will be that the workers themselves will bar outsiders who attempt to stir up strife and discord.



FORMULA FOR CONE-WINDERS' PRODUCING SPINDLES

Based on the procedure set forth in the accompanying text, the following steps and formula can be followed for computing the cone-winders' producing spindles on which standard production and task are based:

1. Make a job analysis to determine job elements.
2. Make time studies to determine time required to perform various elements:
   a. Time required to remove empty tube from bobbin holder; stick up full bobbin; thread yarn end through tension and drop wire; tie end to yarn end of cone and depress starting handle (R); include get supply bobbin from case and place in machine trough.
   b. Time required to tie up yarn break (P)
   c. Time required to doff full cone and place paper cone on cone spindle (D); include get paper cone and place on machine shelf.
3. Determine:
   a. Yards per supply bobbin (B).
   b. Yards per cone (C).
   c. Machine speed (S).
   d. Breaks per spindle per hour (H).
   e. Time allowed for cone-winders' personal needs and fatigue (usually 15%, or 9 min. per hr.) (N).

Then, for producing spindles

$$\left(\frac{\frac{60}{B}}{S} \times R\right) + \left(\frac{\frac{60}{C}}{S} \times D\right) + \left(H \times P\right) = T$$

and,

$$\frac{\frac{60 - N}{60 + T}}{T} = T_1$$

then,

$$\frac{60 - N}{T_1} = \text{Producing spindles for standard production task.}$$

where T = tending time per spindle per hour of machine running time.
T_1 = tending time per hour after personal and fatigue allowance.

CONE-WINDING TASK
Easily Computed From Data

HIGHLIGHTS: *Time-study findings and machine performance are basis for task, standard production, and piece-work rate—Examples taken from cone winding of woolen and worsted yarns, single and two-ply, in range of counts—Job analysis precedes time-study of qualified operator working at normal rate—Machine performance record must be made for each item of product.*

By RUDOLPH LEPPLA
Supervising Standards Engineer, Fortsmann Woolen Co., Passaic, N. J.

IN THE TEXTILE INDUSTRY, it has long been customary to pay piece-work rates for operations such as cone winding. However, frequently, these rates are set by rule-of-thumb methods and adjusted either upward or downward according to production or performance results. Such practices often result in inefficient use of operators and equipment or in tasks which are unduly fatiguing. The true objective of an incentive plan should be to provide the basis for a just financial reward for production or performance above standard. This objective can be attained by using element breakdown and time study to develop data from which correct tasks and production standards can be determined. An illustration of how element breakdown and time study can be applied to cone winding follows.

Assuming that cases of supply bobbins and paper cones are brought to the machine and full cones removed from the machine by material handlers, the work performed by a cone winding operator may be broken down into the following elements:

1. Remove empty tube from bobbin holder; stick up full bobbin; thread yarn through tension and drop wire; tie end to yarn end of cone (or, if first bobbin, wrap end around paper cone) and depress starting handle.
2. Tie up yarn break.
3. Doff full cone and place paper cone on cone spindle.
4. Get armful of supply bobbins from case and place in machine trough (6 bobbins per armful).
5. Get stick of paper cones from case and place on machine shelf (30 cones per stick).

TIME-STUDY DATA. Time studies show the following times are required for these five elements when performed by a qualified operator working at normal speed (numbers correspond with paragraphs just above):

1. 0.22 min (.19 + .03) to remove empty tube from bobbin holder; stick up full bobbin; thread yarn end through tension and drop wire; tie end to yarn end of cone (or, if first bobbin, wrap end around paper cone) and depress starting handle.
2. 0.20 min. to tie up yarn break.

3. 0.09 min. (.08 + .01) to doff full cone and place paper cone on cone spindle.

4. 0.19 min. to get armful of supply bobbins from case and place in machine trough (6 bobbins per armful).

5. 0.28 min. to get stick of paper cones from case and place on machine shelf (30 cones per stick).

Theoretically, one supply bobbin is placed in the machine trough for each supply bobbin stuck on the bobbin holder and one paper cone is placed on the machine shelf for each full cone doffed. Therefore the time established for element 4 above is divided by the number of bobbins per armful (6) and the time established for element 5 above is divided by the number of cones per stick (30), and the results added to the times established for elements 1 and 3 above. By this method, the occurrence per cycle of elements 4 and 5 is established and the time values suitably allocated.

Before tasks and standard production can be computed, three additional items must be established:

1. Yarn breaks per spindle per hour.
2. Machine speed in yards per minute.
3. Length of yarn contained on a supply bobbin and the number of supply bobbins to be wound on a cone.

Yarn breaks per spindle per hour can be determined by observing, for one hour, a given number of spindles, all winding yarn of the same count and quality, and recording the breaks as they occur. A suitable number of spindles to observe is 15 spindles for single wool yarn, 10 spindles for 2-ply wool yarn, 30 spindles for single worsted yarn, and 15 spindles for 2-ply worsted yarn. This test, made on the range of counts which are to be cone wound and repeated until valid averages are obtained, gives the yarn break data presented in Table I.

Machine speed can, of course, be found by determining the circumference and rpm. of the cone roll. However, since usually some slippage will occur between the winding cone and the cone roll, a more accurate figure is obtained by noting the time required to wind one cone (omitting any spindle down time) and then measuring the length of yarn wound on the cone. Dividing the yarn length by the time required to wind the cone will give the machine speed in yards per minute. (360 yd. per min. is the speed used in the accompanying task and production charts.)

Length of yarn contained on a supply bobbin and the number of supply bobbins to be wound on a cone depend on the type of spinning or twist-

(Continued on page 220)

TABLE I.

Yarn Breaks Per Spindle Per Hour

Yarn and Count	Average Breaks	Brks./Spdle/Hr.
Single Wool (Run)		
1.0 to 4.5	14	14/15 = 0.93 or 1
5.0 to 7.5	19	19/15 = 1.27 or 1 1/4
2-ply Wool (Run)		
2/3.0 to 2/7.5	5	5/10 = 0.50 or 1/2
Single Wstd.		
1/11 to 1/21	7	7/30 = 0.23 or 1/4
1/22 to 1/28	15	15/30 = 0.50 or 1/2
1/29 to 1/43	27	27/30 = 0.90 or 1
1/44 to 1/58	36	36/30 = 1.20 or 1 1/4
2-ply Wstd.		
2/11 to 2/28	3	3/15 = 0.20 or 1/4
2/29 to 2/58	8	8/15 = 0.53 or 1/2

TABLE II.

Single Wool Yarns

Yarn Run	Standard Production Per Hour Pounds	Producing Spindles	Task (Minimum)
1.0	33.06	3.88	4
1.5	32.90	5.30	6
2.0	32.76	6.71	7
2.5	32.63	8.11	9
3.0	32.48	9.49	10
3.5	32.29	10.85	11
4.0	32.16	12.21	13
4.5	32.01	13.55	14
5.0	31.51	14.73	15
5.5	31.29	16.00	16
6.0	31.01	17.26	18
6.5	30.97	18.54	19
7.0	30.74	19.75	20
7.5	30.60	21.00	21

PIECE WORK RATE

$$\left(\frac{\text{Base Rate}}{\text{Stand. Prod. per Hr.}}\right)$$

TABLE III.

2-Ply Wool Yarns

Yarn Run	Standard Production Per Hour Pounds	Producing Spindles	Task (Minimum)
2/3.0	33.19	5.34	6
2/3.5	33.12	6.05	7
2/4.0	33.05	6.76	7
2/4.5	33.05	7.48	8
2/5.0	33.01	8.19	9
2/5.5	33.00	8.91	9
2/6.0	32.93	9.61	10
2/6.5	32.91	10.32	11
2/7.0	32.85	11.02	12
2/7.5	32.78	11.71	12

PIECE WORK RATE

$$\left(\frac{\text{Base Rate}}{\text{Stand. Prod. per Hr.}}\right)$$

TABLE IV.

Single Worsted Yarns

Yarn Counts	Standard Production Per Hour Pounds	Producing Spindles	Task (Minimum)
1/11	33.11	12.11	13
1/12	33.11	13.12	14
1/13	33.04	14.10	15
1/14	32.97	15.08	16
1/15	33.02	16.11	17
1/16	32.97	17.09	18
1/17	32.88	18.05	19
1/18	32.92	19.07	20
1/19	32.87	20.05	21
1/20	32.78	21.00	21
1/21	32.87	22.05	23
1/22	32.16	22.58	23
1/23	32.16	23.56	24
1/24	32.02	24.44	25
1/25	32.12	25.49	26
1/26	31.93	26.32	27
1/27	31.96	27.32	28
1/28	31.93	28.27	29
1/29	30.42	27.91	28
1/30	30.22	28.65	29
1/31	30.36	29.71	30
1/32	30.13	30.41	31
1/33	30.11	31.31	32
1/34	29.98	32.09	33
1/35	29.74	32.75	33
1/36	29.86	33.79	34
1/37	29.70	34.52	35
1/38	29.58	35.29	36
1/39	29.50	36.09	37
1/40	29.45	36.93	37
1/41	29.26	37.59	38
1/42	29.09	38.27	39
1/43	29.14	39.22	40

PIECE WORK RATE

$$\left(\frac{\text{Base Rate}}{\text{Stand. Prod. per Hr.}}\right)$$

TABLE V.

2-Ply Worsted Yarns

Yarn Counts	Standard Production Per Hour Pounds	Producing Spindles	Task (Minimum)
2/11	33.26	6.58	7
2/12	33.23	7.08	8
2/13	33.24	7.59	8
2/14	33.21	8.09	9
2/15	33.17	8.59	9
2/16	33.19	9.10	10
2/17	33.18	9.60	10
2/18	33.12	10.09	11
2/19	33.13	10.60	11
2/20	33.12	11.10	12
2/21	33.10	11.60	12
2/22	33.11	12.11	13
2/23	33.10	12.61	13
2/24	33.11	13.12	14
2/25	33.07	13.61	14
2/26	33.04	14.10	15
2/27	33.05	14.61	15
2/28	32.97	15.08	16
2/29	32.60	15.42	16
2/30	32.63	15.93	16
2/31	32.53	16.38	17
2/32	32.52	16.87	17
2/33	32.49	17.35	18
2/34	32.42	17.81	18
2/35	32.49	18.34	19
2/36	32.42	18.80	19
2/37	32.33	19.24	20
2/38	32.36	19.75	20
2/39	32.33	20.23	21
2/40	32.24	20.67	21
2/41	32.30	21.20	22
2/42	32.30	21.69	22
2/43	32.22	22.13	23

PIECE WORK RATE

$$\left(\frac{\text{Base Rate}}{\text{Stand. Prod. per Hr.}}\right)$$

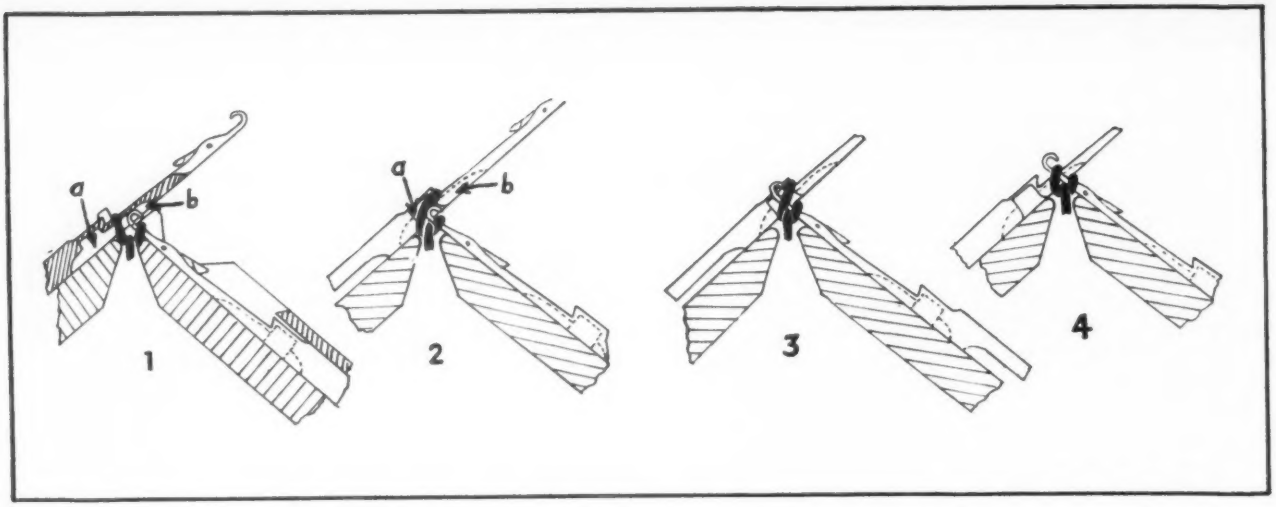


Fig. 2. B.A.R.B. (Dubied) method of transfer devised for flat-bar knitting.

LOOP TRANSFER Methods Show Knitting Ingenuity

HIGHLIGHTS: *Introduction of latch needle brought opportunity to transfer loops from one needle to another—Three modern methods use divergent principles to attain similar results in rib knitting—Progressive steps are illustrated.*

By CHARLES R. CARTER

SINCE THE INTRODUCTION of the latch needle in 1849, the attentions of machine designers have from time to time focused upon methods for transferring the loops from one needle to another mechanically. That this attention should have been paid is natural. The effort attained success quite early, as is evidenced by a patent of 1863 which shows a modified needle capable of achieving the loop transfer. This needle is illustrated in Fig. 1. Undoubtedly the reason for its non-survival is that the needle industry was not developing at the same rate as the inventive faculty of that early period.

The modern counterparts of this early genius, with great advances in engineering to back their efforts, have produced successful machines capable of transferring selectively the loops of one set of needles to another set. Their efforts have led them into slightly differing paths, due in all probability to the need to avoid infringement on one another's patents. The results are quite interesting.

The purpose of this article is to describe three methods applied to modern machines, namely the B.A.R.B. (Dubied), the R.T.R. (Wildt), and R.L.G.T. (Mellor Bromley).

The B.A.R.B. (Fig. 2) incorporates the loop transfer in flat-bar knitting. This transfer may take place either from front to back bed or vice-versa with equal facility. In order to accomplish this, the transferring motions are preceded by a shogging action of the needle bed to bring both sets of needles opposite to each other. The transfer is illustrated in Fig. 2. The first drawing of this series shows that the receiving needle head has entered a slot (*b*) cut in the stem of the opposing needle to make sure that the loop is not split. The opposing needle then rises higher to enable the receiving needle head to rise and slide up

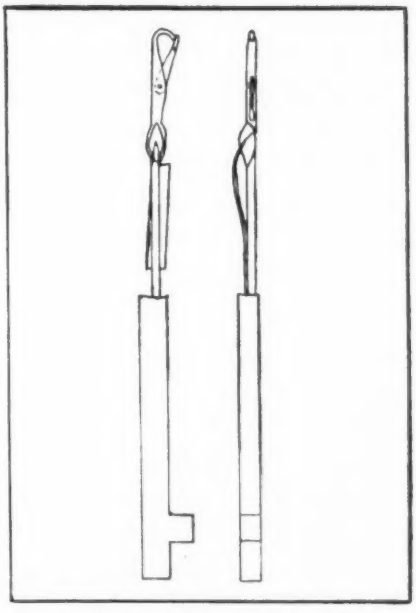


Fig. 1. Early latch needle (1863) was designed to permit transfer of loops to another needle.

the chamfered area (a); and, by so doing, to enter the loop. This is followed by the downward movement of the opposing needle (fourth drawing) to knocking-over level to cast off the loop which is now safely transferred.

The cylinder-to-dial transfer of the R.T.R. (Fig. 3) is shown in the drawings of group A. A simpler type of needle is used here, the shaded portion

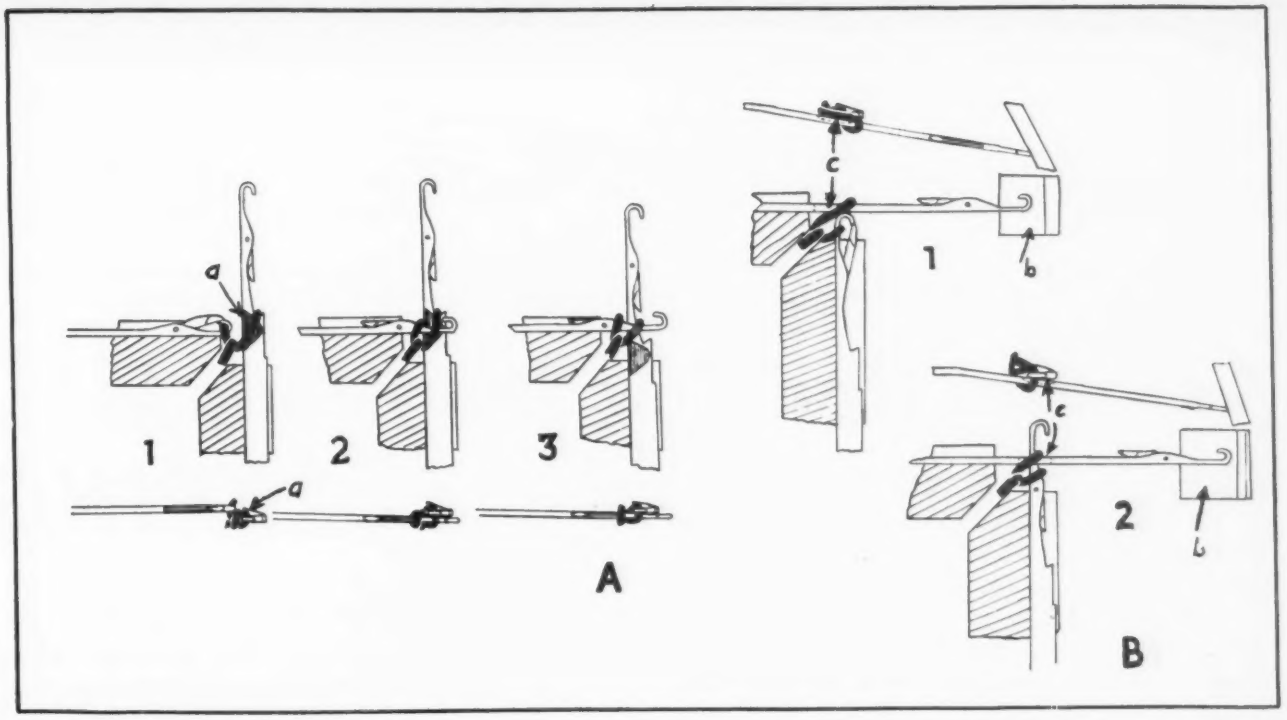


***Fig. 3. R.T.R. (Wildt)** transfer method applies to circular knitting. Group A shows the cylinder-to-dial transfer. Group B shows the same needles operating in dial-to-cylinder transfer.*

(a) being pressed and milled to oppose the dial needle, which advances and is deflected by this chamfer. The loop is entered by the dial needle in the process, and the transfer is achieved by the downward movement of the cylinder needle. The plan drawings of Fig. 3A show the deflection of the dial needle from its normal side of the cylinder needle to the transfer side. The dial-to-cylinder transfer (Fig. 3B) is effected without having a loop-extending step on these needles and depends upon a considerable deflection of the dial needle when in a forward position by a cam (*b*) acting upon the head of the needle. The rotation of the machine carries these needles far enough over to allow the cylinder needles to be brought up on the other side to normal position in close proximity to and assisted by a small chamfer shown in dotted lines (*c*). In this way, the head of the cylinder needle enters the dial loop and the transfer is completed when the dial needle moves to the left to press off its loop.

Both the B.A.R.B. and R.T.R. systems impose the least possible strain and extension upon the transferred loops as there is no attempt to expand them sideways.

The R.L.G.T. system uses expander instruments in addition to needles. It is shown in Fig. 4. The three positions illustrate both the dial-to-cylinder and cylinder-to-dial transfer. The methods are similar and if the drawing be turned 90°, the dial-to-cylinder transfer is shown. The expander and needle are in the same trick and are actuated together, having butts at the same positions. The upward movement of the transferring needle not only extends but expands the loop sideways and the dial needle enters through the gap. The point of the expander rests in an eye on the side of the needle and the downward movement of the transferring needle and expander causes this point to pass over the receiving needle and then spring back into the eye. The transfer is completed by the continued downward movement of the needle to press off the loop which is now held by the dial needle.

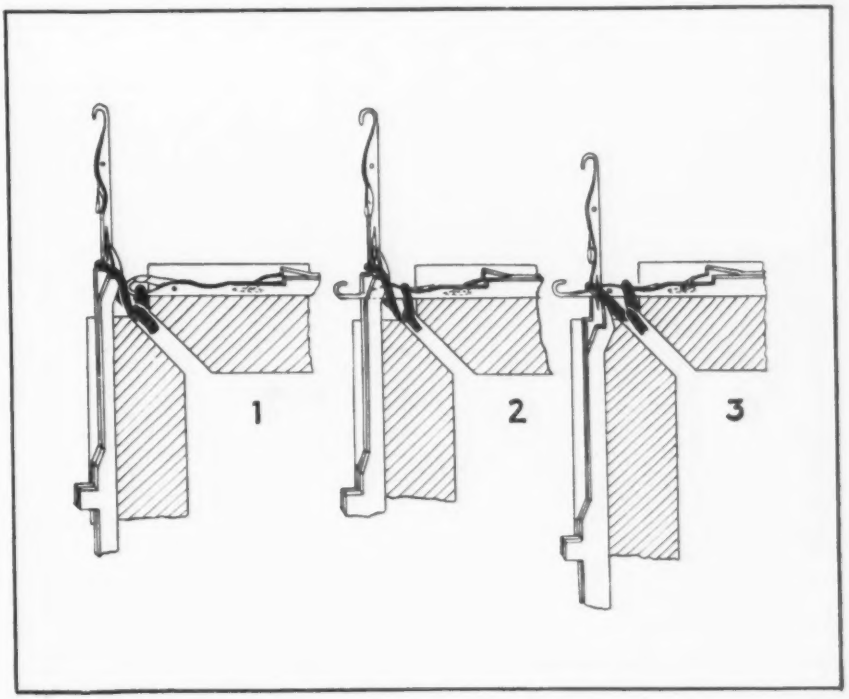


***Fig. 4. R.L.G.T. (Mellor Bromley)** system uses a loop-expanding device to facilitate transfer, both dial-to-cylinder and vice versa.*

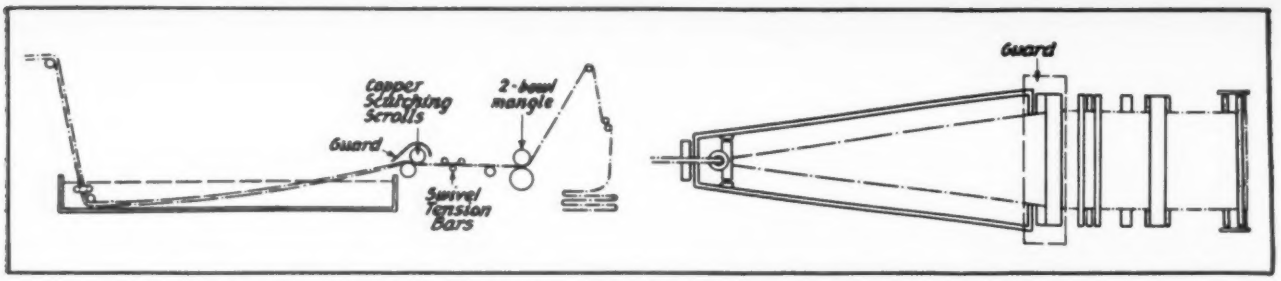


Fig. 1. Short, water-borne traverse on this scutcher brings cloth from rope to open form with minimum tension.

Germans Had Few Short-Cuts in PREPARATION and CREPING

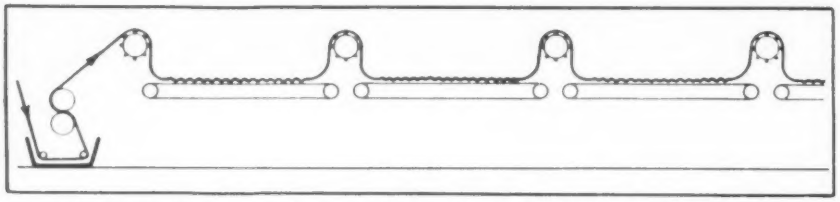


Fig. 2. Continuous-creping machine handles rippled cloth on rubber blankets.

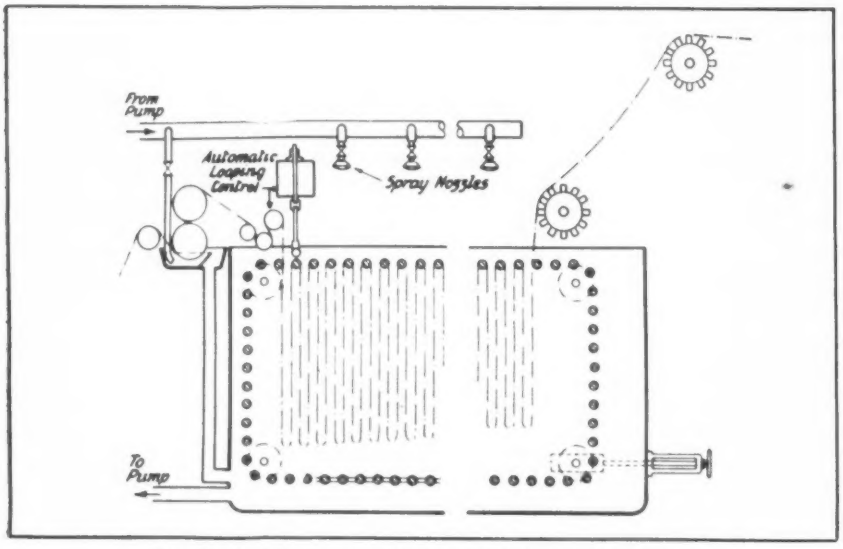


Fig. 3. Another creper handles cloth festooned on poles.

HIGHLIGHTS: *Continuous processing was rare in German cloth preparation techniques — However, a continuous creping unit was developed and operated — Counter-flow washing machines and a new scutcher are reported—For creping, Germans tried four different machine layouts.*

By C. NORRIS RABOLD
Consulting Editor, TEXTILE WORLD

SUPPLEMENTING previously summarized material on technical practices in the finishing branch of the German textile industry are reports of the British investigators which have recently been released. Abstracts of interest to the American manufacturer have been taken from these reports and are presented herewith.

PREPARATION. Singeing by gas was employed when required, the only variant being, in one instance, a

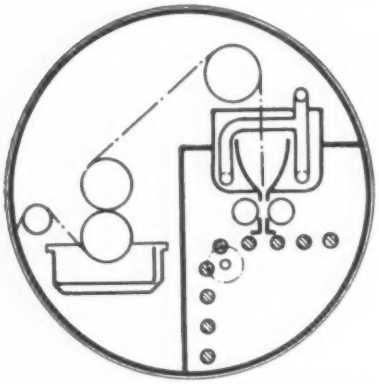


***Fig. 4. Novel form** of injector feeds cloth to poles in festoon tank.*

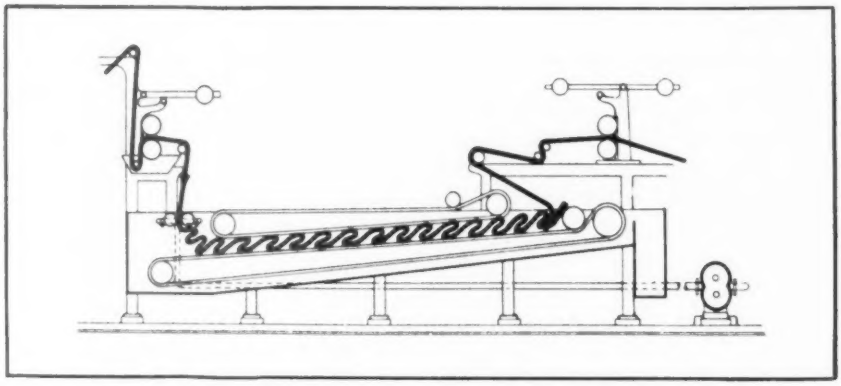


***Fig. 5. Cloth is rippled** between rubber blankets below liquor surface.*

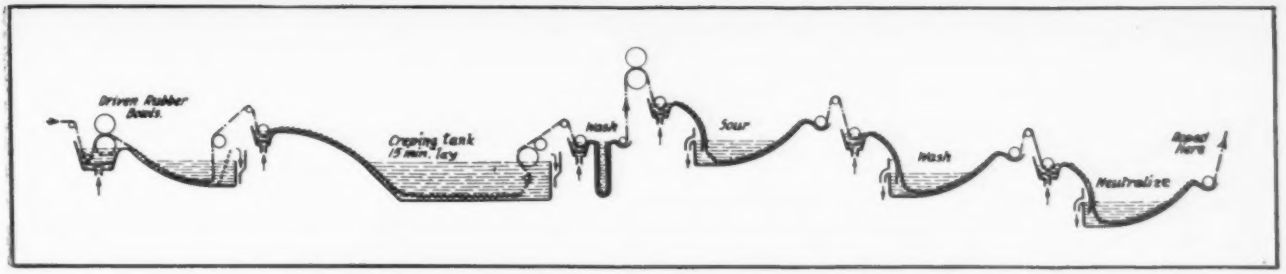


***Fig. 6. Most recent** creping machine overcomes many earlier problems.*

change to atomized fuel oil after the machine had been running for half an hour. Machines by Osthoff were in most general use. Desizing with enzyme preparations was confined largely to cloths containing sized-cotton warps; and, with the exception of a novel continuous machine for desizing, scouring, and washing crepes, which is described later, no continuous processes were observed.

No machines processing cotton were seen in operation, but neither machines nor processes revealed any points which are not encountered, at least occasionally, in this country. Sometimes spun-rayon cloths and cloths containing both cotton and spun rayon were kier-boiled with soda ash, the former without pressure and the latter at 10 to 15 lb. excess pressure, and afterwards bleached, either with hypochlorite or peroxide. At other plants, goods were scoured and bleached with peroxide on winch machines. There was observable a definite trend toward the omission of scouting in favor of a bleach with peroxide—or, in one instance, hypochlorite followed by peroxide—and toward use of large wooden vats, holding up to two tons of cloth, instead of kiers.

Continuous scouring was encountered only in the range described in the following section. Continuous bleaching was found only in a smaller edition of that same range using peroxide, and also by the use, after kier boiling, of wooden boxes closely resembling Gantt pilers. Examination indicated that the quality of product which appeared to be acceptable was

(Continued on page 184)

THE DISCUSSION here presented on preparation for all types of goods and on creping methods for synthetic fabrics forms a part of the British Intelligence Objectives Sub-Committee's Final Report No. 574. This report is entitled "The German Dyeing, Printing, and Finishing Industry." British Intelligence Objectives Sub-Committee, or BIOS, was the counterpart of Combined Intelligence Objectives Sub-Committee, known as CIOS, under which the original American Intelligence Objectives were carried on in Germany.

Much information contained in the British report appears in the reports of various American investigators in considerably greater detail than in the British report. The American reports include the following, all of the textile series:

Report No. 3, "German Technical Developments in Textile Finishing Processes," by Francis S. Richardson.

Report No. 20, "The Textile Printing Industry in Germany," by Eliot Broadbent.

Report No. 21, "German Methods for Finishing Rayon Fabrics," by Glenn D. Jackson, Jr.

Report No. 22, "Observations on the Dyeing and Finishing Industry in Germany and Austria," by C. Norris Rabold.

The above four reports are released for public information by the Office of the Publication Board, U. S. Department of Commerce, Washington 25, D. C.

While all of the American investigators apparently covered preparation, which includes scouring and bleaching, more thoroughly than did the British, the latters' final report mentions one or two facts not included in the American reports. Most of the CIOS investigators assigned to textile bleaching, dyeing, and finishing touched rather briefly, or not at all, upon the various procedures and equipment used in German finishing plants for preparing crepes.

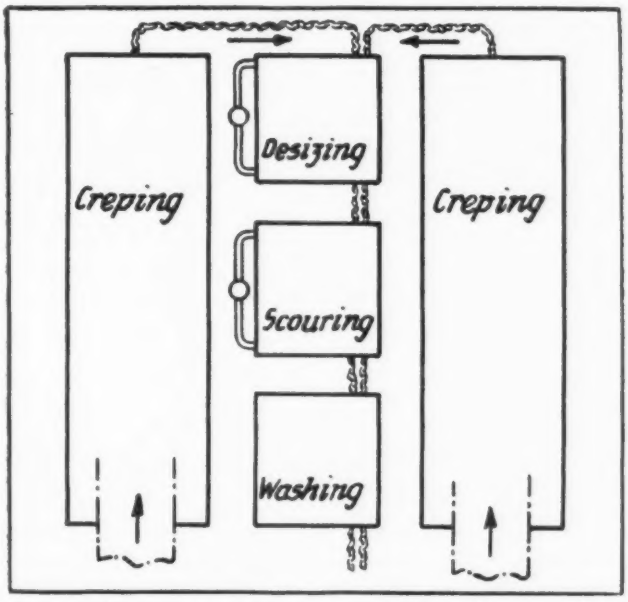


***Fig. 7. Plan view shows** continuous creping machines (type shown in Fig. 6) coupled with desizing, scouring, and washing boxes for a complete range.*

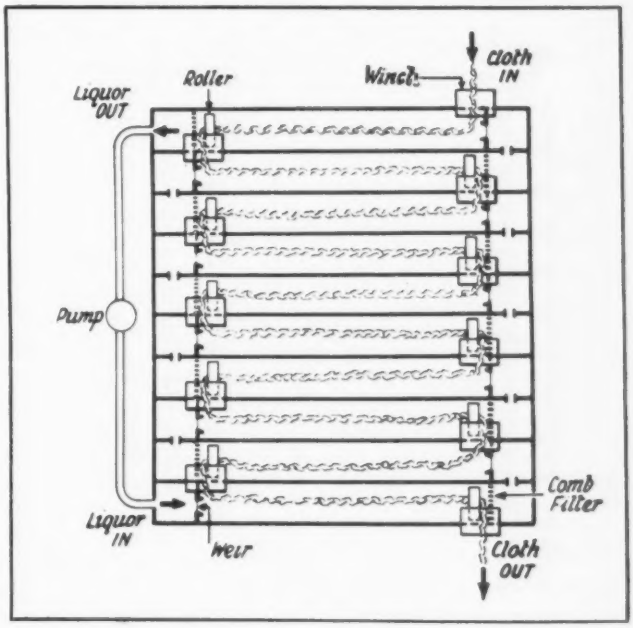


***Fig. 8. Ten-section box** such as shown in Fig. 7 handles cloth in rope form.*

TABLE 1—Comparative Cost of Suppressing Foam in 1,000 Lb. of Three Strong Foamers

Foam Suppressor	Cost per Pound	In an Aqueous Alkaline System		In a Solvent Water System		In an Aqueous Protein System	
		Pounds Required[1]	Cost in Dollars	Pounds Required[2]	Cost in Dollars	Pounds Required[3]	Cost in Dollars
A	0.01	160.00*	1.60	200.00*	2.00	160.00*	1.60
B	0.07	97.50*	6.83	22.00	2.96	65.00*	4.55
C	0.13	10.30	1.34	15.48*	2.01	1.03	0.13
D	0.15	40.60	6.09	40.60	6.09	162.40*	24.36
E	1.05	0.97	1.02	3.90	4.10	48.60	51.03
DC Antifoam A	7.30	0.018	0.13	0.018	0.13	0.036	0.26

1 Pounds required to reduce life of a unit volume of foam to 20-30 seconds.
2 Pounds required to reduce life of a unit volume of foam to 1-5 seconds.
3 Pounds required to reduce life of a unit volume of foam to 70-80 seconds.
** Not effective.*

TABLE II

Physical Properties of DC 1107

Viscosity at 20°C. in centistokes	10–20
Specific gravity at 25° C.	1.01
Weight in pounds per gallon	8.4
Acid number	less than 0.2
Flash point minimum °F.	225.

SILICONE Water Repellent Now Applicable to All Fibers

HIGHLIGHTS: *Recently developed DC-1107 type, applied in liquid form to fabrics of wool, rayon, nylon, or cotton, proves resistant to dry cleaning and laundering—Many uses for silicone resins, rubbers, and greases.*

By F. L. DENNETT
Dow Corning Corp. Midland, Mich.

THERE ARE commercially available some 80 silicone products, varying in physical form from resins, greases, and fluids, to rubbers, all based on the silicon-oxygen structure.

Motors which are insulated with glass cloth impregnated with a silicone resin can be operated at temperatures 200° F. above present limits.

Other resinous silicones vary from materials which air dry, to those which require 250° C. for proper curing, and from materials which produce a hard thermoset film to those which give a very flexible coating. Some of these are used as vehicles for heat- and weather-resistant paints for use on exhaust stacks, flues, hot-air ducts, ovens, and similar equipment.

Other uses will certainly be found for silicone resins in the textile industry. Crease and crush resistance, shrinkage control, and waterproof laminates are entirely within the realm of possibility.

By using somewhat different starting materials and by carrying out carefully controlled cross-linking of vulcanizing, elastic silicone materials may be produced. These rubbers are characterized by greater heat-stability and resistance to ageing than organic rubbers. They are used as a coating and impregnant for glass, asbestos, and organic fabrics and also as a gasket material for high-temperature applications. Fabrics may be coated with a silicone rubber paste by doctoring, roller coating, or spreading without the addition of any solvents. After the coating is cured, the fabric will be water-repellent, flexible at high or low temperatures, and resistant to ageing, sunlight, and oxidation. Flexible and heat-resistant laminations may be prepared by molding multiple layers of a fabric coated with a silicone rubber paste. Products such as these find application as conveyor belts for use in ovens, valve diaphragms, flexible hot-air ducts, and heat-resistant gaskets.

Abstract of paper presented before American Association of Textile Technologists

LIQUID SILICONES. In general, the liquid silicones possess the water repellency, heat stability, low freezing point, non-volatility, and oxidation resistance that we have come to expect of these semi-inorganic materials. In addition, some liquid silicones are good lubricants under light to medium loads. These oils are characterized by freedom from gumming, low volatility, and heat stability to 500° F. They are recommended for machinery operating at high temperatures and high humidities, such as tenter frames and dry boxes.

Silicone greases are serviceable at temperatures from −40° F. to 400° F. In the temperature range of 200° to 300° F., silicone greases have shown five to ten times the lubricating life of high-quality petroleum greases designed for use at elevated temperatures. Even under severe conditions the silicone greases may be considered waterproof.

A silicone antifoam compound for aqueous solutions is a colorless, translucent paste. It is completely insoluble in water, but is dispersible in pine oil, aromatic solvents, chlorinated hydrocarbon, and petroleum naphthas. An emulsion of the antifoam compound can also be made for use where a solvent dispersion is not applicable. Table I gives the cost of the silicone antifoam compared to the cost of other foam inhibitors.

So little of the antifoam is required that it is, with one exception, the most economical foam suppressor to use even though its cost per pound is many times that of the cheapest foam suppressor tested.

WATER REPELLENT. The possible usefulness of silicones as water-repellent treatments for textiles has encouraged the development of a silicone liquid which could be padded onto cloth from an aqueous dispersion and which would impart durable water repellency and desirable hand. The first success was the permanent water repellency imparted to glass fabrics and fine fibrous glass wool by methyl sili-

(Continued on page 222)

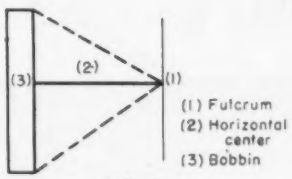


FIG. 1

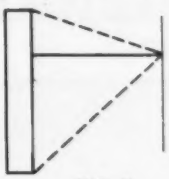


FIG. 2

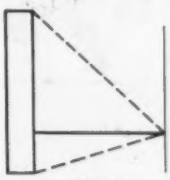
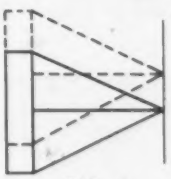


FIG. 3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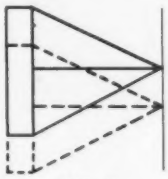


FIG. 5

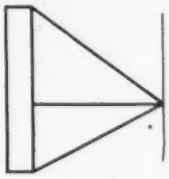


FIG. 6

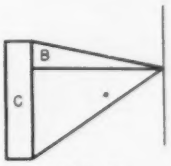


FIG. 7

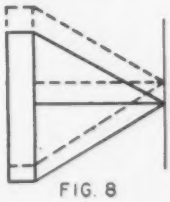


FIG. 8

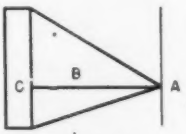
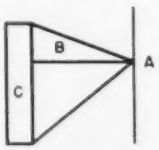
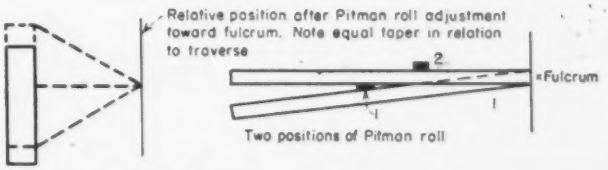


FIG. 9




Relative position after Pitman roll adjustment toward fulcrum. Note equal taper in relation to traverse
2
Fulcrum
1
1
Two positions of Pitman roll
FIG. 10

***Precisely built spinning-packages** are the result of accurate knowledge and training in the fundamentals of the frame builder. The relation between the builder fulcrum, the horizontal center, and the bobbin are shown in Fig. 1. This relationship on a warp builder can be varied to produce different tapers at the top and bottom of the bobbin. Either the Pitman roll or the builder pivot-stud can be adjusted for varied taper, depending upon the type of builder.*

For Whitin and Saco-Lowell builders, Figs. 2 through 10 give a background for the more detailed explanations in the text. Two very common but wrong builds are shown in Figs. 2 and 3, and their corrections are illustrated in Figs. 4 and 5.

The ideal warp-build (as far as taper is concerned) is shown in Fig. 6, and this drawing is the only one which applies to both the Whitin and the Saco-Lowell builders referred to in the text.

For the Saco-Lowell builder, the two most common errors found in the spinning room are shown as Figs. 7 and 9, with the corrected build in Fig. 8.

Sometimes it is desirable, sometimes necessary, to adjust the Pitman roll instead of the builder pivot in changing the taper on the bobbin. The effect of this change is shown graphically in Fig. 10.

How to Adjust the BUILDER Properly for Correct Taper

***HIGHLIGHTS:** Top taper on warp-built spinning bobbin should be 1⅜ to 1½ in.—Bottom taper should be 1⅛ to 1¼ in.—Horizontal center-line between fulcrum and bobbin is changed to vary the taper—Adjustments at pivot stud or Pitman roll shown graphically.*

By F. H. GUNTHER and MARCUS GROSS

PROPER USE of the spinning-frame builder involves most importantly the relationship of the fulcrum and the horizontal center of the builder to the bobbin. In all straight-warp winds, whether the rack winds in or out, the type of bobbin desired is determined by the fulcrum position and the resulting horizontal center. The relationship between fulcrum, horizontal center, and bobbin is shown in Fig. 1.

In this figure is shown a builder that is set for approximately equal taper at the top and bottom. The fulcrum and horizontal center are in equal relationship to the center of the bobbin. The traverse extends the same length beyond each side of the horizontal center, thus distributing the picking action equally for the desired tapering.

The picking action and the lay gear control the length of taper. With such a build as shown in Fig. 1, how can the length of taper be determined? First, set the traverse for its full length by adjusting the warp-wind cam and the quadrant. When the traverse has been made upon the bobbin, wind the rack toward the fulcrum. Turn cam gear by hand to bottom- and top-rail positions, and note the distance from starting to finished traverse. These distances represent the relative finished tapers, and the positions of fulcrum and horizontal center become known insofar as their relationship to the bobbin build are concerned.

COMMON, BUT WRONG. Figs. 2 and 3 show two quite common builds. Both of them are wrong. The relation of the horizontal center to the bobbin

(Continued on page 194)

Yarn with a Happy Ending!

SUN TEXTILE LUBRICANT...

Cuts Dripping, Splashing and Spotting in Woolen Mill

Splashing and dripping of oil from gears, cams, bearings, and chains of different machines were reducing quality and increasing costs in a big Eastern worsted mill.

Spots in cloth could not be entirely removed by mechanical washers or by hand spotting, and on the spotted areas of cloth the dye would not take.

A Sun Engineer recommended that the mill change to a Sun lubricant specially processed for textile machines — one that adheres to metal parts. The mill changed over and now reports that dripping and splashing have been cut to the minimum. Washing and dyeing problems have disappeared.

The results in this mill are typical of those attained in many plants where Sun "Job Proved" lubricants are used. The Sun Engineer may be able to help you achieve similar lubricating economies. Call your nearest Sun office today or write Dept. T-5.

SUN

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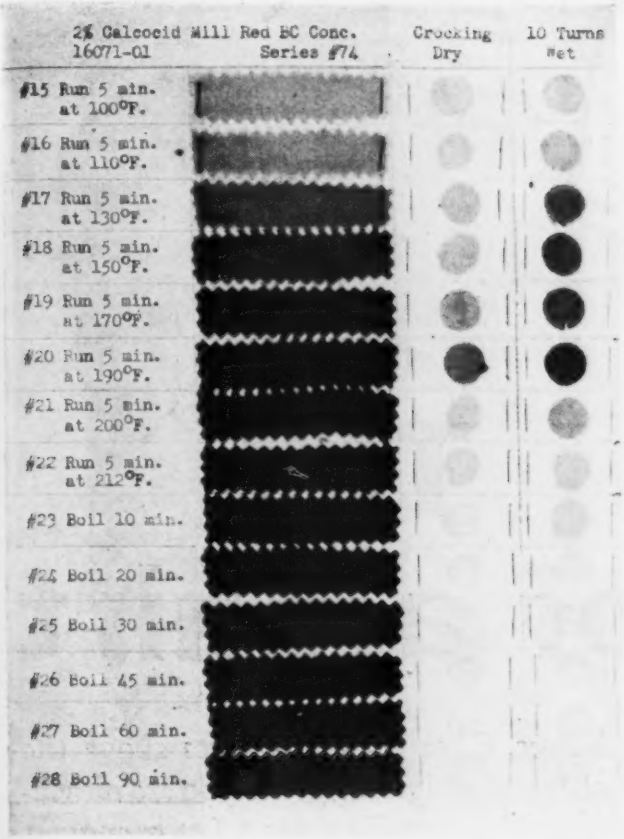
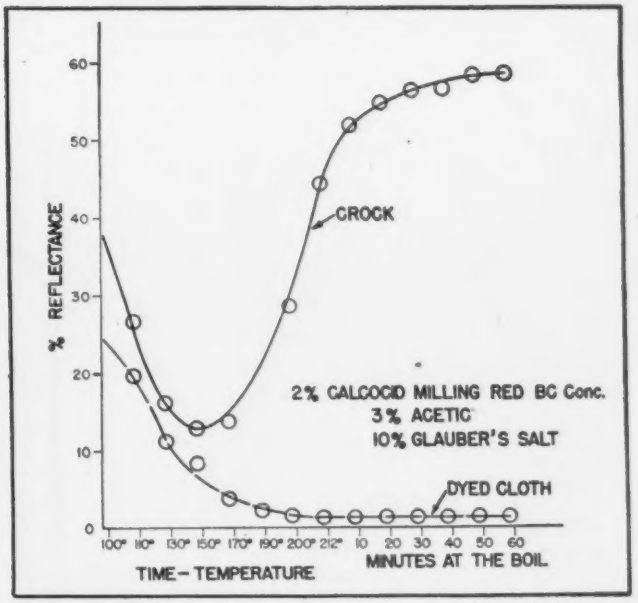
INDUSTRIAL PRODUCTS

SUN OIL COMPANY · ***Philadelphia 3, Pa.***

In Canada: Sun Oil Company, Ltd.—Toronto and Montreal.


2% Calcocid Mill Red BC Conc.
16071-01 Series #74
Crocking Dry
10 Turns Wet
#15 Run 5 min. at 100°F.
#16 Run 5 min. at 110°F.
#17 Run 5 min. at 130°F.
#18 Run 5 min. at 150°F.
#19 Run 5 min. at 170°F.
#20 Run 5 min. at 190°F.
#21 Run 5 min. at 200°F.
#22 Run 5 min. at 212°F.
#23 Boil 10 min.
#24 Boil 20 min.
#25 Boil 30 min.
#26 Boil 45 min.
#27 Boil 60 min.
#28 Boil 90 min.



***Reflectance curves** derived from the dyed samples and the crock patches which are shown in accompanying photograph. The critical crock point comes early in the dyeing process in this particular test. For different dyes, different curves are produced.*

***Crocking performance** is shown in text patches made dry and wet. The dyed samples of the fabric are shown in the swatches. Fourteen steps in the dyeing operation are given with time intervals and temperatures. The dye bath was made up of 2% Calcocid Milling Red BC Conc., with 3% acetic acid (56%) and 10% Glauber's Salt.*

Wool Dyeing Process Has CRITICAL CROCK POINT

***HIGHLIGHTS:** Correlation found between critical point of dyeing and critical point of crocking—Varies from dye to dye and with changes in procedure—Soaping, fulling, etc., reduce crocking—Hair fibers more prone to crock than wool—Removal of all oils from fibers insures against excessive crocking.*

By H. E. MILLSON, W. H. WATKINS, and G. L. ROYER*
Calco Chemical Div., American Cyanamid Co., Bound Brook, N. J.

THE MECHANICAL TRANSFER of color from a dyed material to another material with which it comes in contact is called crocking or rubbing. Crocking becomes most evident when a darkly dyed fabric rubs against a white or lightly dyed fabric, and the white or lightly dyed fabric becomes discolored. This discolored area is called the "crock." The difficulty of producing dyed materials which do not exhibit excessive crocking has long been recognized.

In the field of cotton coloring, many articles have been written on crocking, dealing particularly with naphthols and vat colors. However, in the field of wool dyeing, little information bearing directly on this subject has been found. Therefore, the problem of crocking seemed to be sufficiently important to warrant a detailed study.

The importance of using the proper method of application for a dye as it affects color value and fastness properties, such as crocking, washing, and light, has been investigated. The influence of time and temperature on the penetration of dyes has also been studied and it was found that one or more critical points was reached when dye was absorbed from a dye bath. The critical point of a dyeing has been defined as that period during the course of the dyeing procedure when a sudden increase in color development and change from ring dyeing to complete penetration takes place within a narrow range of time and temperature. It was found that a critical point of crocking also occurred as was shown by comparison of the crocks of samples removed at different stages of the dyeing operation.

For those dyes which gave a critical crock point, the depth of crock in-

(Continued on page 238)

*Abstract from Calco Technical Bulletin No. 780.

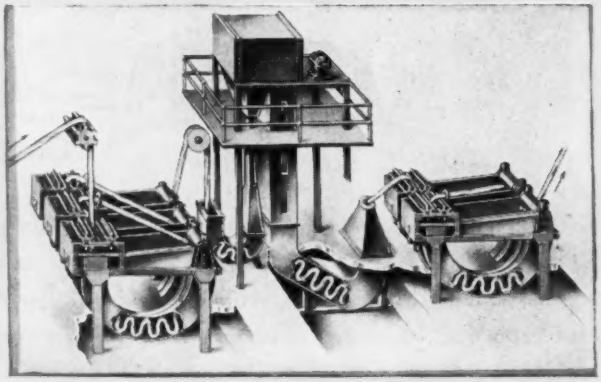
Tale of a Shirt

What makes a good "T"-shirt?

Ask the bleachery superintendent—he looks for a good permanent white, no loss in elasticity, no loss in strength, low weight loss, minimum loss in natural softness and hand.

Ask the mill owner—he checks production figures, calculates chemical and labor costs, balances daily output against his investment in plant and equipment.

No matter what your knit goods bleaching requirements may be, perhaps you can do it better—for less—with a Butterworth Continuous Bleaching Range. Give us a few facts about the class and weight of goods you are bleaching and your daily output. Let us suggest how Butterworth experience and Butterworth Machines can help you to get superior bleaching results at low cost.



Butterworth Continuous Bleaching Range for knit goods. Tension is minimized by special piling and tension devices in the high speed Slack Washer, special reels and piling mechanism in the streamlined "J"-box.

Butterworth

H. W. BUTTERWORTH & SONS COMPANY, Phila. 25, Pa.

PROVIDENCE DIVISION, Providence, R. I. - 1211 Johnston Bldg., Charlotte, N. C. - W. J. Westaway Co., Hamilton, Ont. - ARGENTINA: Storer & Cia., Buenos Aires - AUSTRALIA: Noel P. Hunt & Co., Ltd., Melbourne - BELGIAN CONGO: Paul Pilieger & Co. - BOLIVIA: Schneiter & Cia., Ltda., La Paz - BRAZIL: Cia. Industria e Commercia, Glossop, Sao Paulo e Rio de Janeiro - CHILE: Schneiter & Cia., Ltda., Santiago - COLOMBIA: C. E. Halaby & Co., Medellin - CUBA: Thos. F. Turrull, Havana - ECUADOR: Richard O. Custer, S. A., Quito - FRANCE Georges Campin, Le Perreux, Seine; Rene Campin, Sceaux, Seine - MEXICO: Slobotzky, S. A., Mexico, D. F. - MIDDLE EAST, MEDITERRANEAN, BALKANS, AUSTRIA, HUNGARY, CZECHO-SLOVAKIA, INDIA: Arlind Corporation - NORWAY: Dr. Ing. Otto Falkenberg, Oslo - PERU: Custer & Thommen, Lima - SOUTH AFRICA: Texmaco, Johannesburg - SWEDEN: Elof Hansson Goteborg. - URUGUAY: Storer & Cia., Ltda., Montevideo - VENEZUELA: Herbert Zander & Co., Caracas.

TABLE I—Test Results of Blending Staple Lengths

	M-1"	M 15/16"	BLEND 50% M-1"	BLEND 50% M-15/16"
I. EVENINESS (Standard deviations)				
Card sliver	1.03	1.035	.945	
Drawing sliver	.615	.615	.680	
Roving	1.15	1.34	1.085	
II. MAXIMUM VARIATIONS (%)				
Card sliver	21.9	24.1	20.6	
Drawing sliver	12.8	14.8	14.8	
Roving	10.2	10.7	10.8	
Yarn size and breaking strength	46.7	45.8	38.9	
III. RUNNING QUALITIES (Ends down chargeable to fiber)				
Roving frame	3.7	9.2	3.3	
Spinning frame	9.2	16.3	10.0	
Warper per M yd.	.125	.220	.215	
Beamer per M yd.	.83	1.5	.91	
Loom	.330	.426	.312	
IV. BREAKING STRENGTH 21s yarn (in lb.)				
Skein	100.5	91.75	96.6	
Single end	.865	.82	.865	

Note — 12,000 lb. of stock was used in each fiber group.

John S. Turner, agent, Bibb Mfg. Co., Columbus, Ga., led the discussion on carding.

Better Cotton PREPARATION Is Aim of Georgia Mill Men

HIGHLIGHTS: *Conveying opened cotton, controlling workable waste, and blending staple lengths undergo study—Textile Operating Executives of Ga. hear an automatic lap-handling system described—With continuous strippers, one mill runs cylinders 3,744 hr. between grindings, carding up to 47,174 lb.*

The Textile Operating Executives of Georgia held its spring meeting in Atlanta, Mar. 20, with R. P. Hardeman, assistant general manager, Riegel Textile Corp., Trion, Ga., presiding. Now in its 26th year, the organization has an enrollment of 91 mill memberships—the largest in its history.

Prior to the meeting, 13 questions on opening, picking, carding, drawing, and roving and 12 questions on spinning, winding, twisting, and warp preparation were sent to all Georgia mills. Written answers were received from 29 mills and mill groups, operating 1,397,610 spindles. The same questions were discussed orally at the meeting.

The questions on carding and some of the more representative answers in condensed form are presented here. A similar presentation of the spinning questions and answers will appear in an early issue.

PULLING COTTON BY SUCTION from the opener room to the picker room is practiced much more widely than blowing it, according to information given in answer to the first question in the carding session. Twenty-four mills answered this question. Of this number, only two mills reported that they blow their cotton to the picker rooms. Nineteen mills reported that they have had no experience with blowing; and three mills stated that they both blow and pull, using booster fans at intermediate points of the pipe lines.

Mill No. 12 wrote: "We have two separate opener units that blow cotton from our opener line to the picker room. The cotton comes out of the Superior machine through the fan, and the fan blows the cotton to an overhead collector in the picker room. We run $\frac{7}{8}$-in. Middling cotton. This arrangement is entirely satisfactory."

Mill No. 23: "All of our stock is blown from the opening room to the picker room. The stock is pulled through several hundred feet of pipe line, through a No. 6 Sturtevant fan, and onto the condenser that feeds the picker distributor. Beyond the condenser is a No. 6 Sturtevant fan that acts a booster fan, and this fan exhausts to the dust cellar. Due to the distance from the opening room to the picker room and the volume of cotton being handled, we have never found any system that would work without putting the stock through the fan. We have not found any damage done to the stock. This, however, has been tested only on the shorter-staple cottons and might not be true for longer staples. We run the following:

"Grade—M, SLM, and LM
"Staple—1 in., $1\frac{1}{16}$ in., and $\frac{7}{8}$ in."

Mill No. 14: "Our mill is equipped with two lines of openers, each line feeding through a separate pipe to two lines of pickers in the picker room. Midway between the two rooms the cotton passes through the blades of a fan. We get both suction and blowing of the cotton. We find that the passage through the fan's blades tends to open the cotton better."

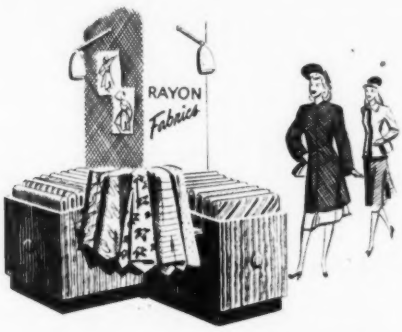
QUESTION NO. 2: *Give your experience as to the best methods of reclaiming each type of reworkable waste. State what you think is a minimum percent of waste that each process should yield.*

Twenty-seven mills answered this question. The consensus was that waste can be kept within reasonable percentages at the various processes only by weighing the waste made by each operator at the end of each shift. Total waste percentages given by the 27 mills varied from 2.13% to 7.0%.

Mill No. 10 wrote: "We use the following method and think it is the best we have ever used. We have a

our reel story

your real quality story



If you took a tightly wound package of yarn and put it in a tub of water, you might expect all the yarn to be evenly saturated. Actually this isn't so. The outer layers become soaked while the inner layers remain relatively dry.

If you took another package and passed the individual strand of yarn through a stream of water from a faucet, you would of course be able to soak every inch of the yarn throughout its entire length.

In this simple comparison, you have the major difference between Industrial Rayon's Continuous Process and other methods of rayon production.

Instead of processing the yarn in package form in which the treating solutions cannot be applied evenly to every bit of thread in the package, the Continuous Process applies the treatments directly to every inch of every filament as the yarn passes over thread advancing reels. In this way the entire length of yarn in a package gets exactly the same processing.

The use of yarn receiving this individual thread treatment means better woven cloth, level color, pleasing hand and lustre, and unequalled dyeing uniformity. These factors give you ***your real quality story*** in rayon fabrics.

To find out more about "our reel story" that stands behind this achievement, send for a copy of our new booklet, "Rayon, Mile by Mile—Perfect Inch by Inch."

INDUSTRIAL RAYON CORPORATION

CLEVELAND, OHIO • NEW YORK OFFICE: 500 FIFTH AVENUE

Makers of *SPUN-LO Rayon yarn and cloth • *TYRON Rayon yarn, cord and fabric

uniformity rides the reels

*Reg. U. S. Pat. Off.

TABLE II—Card Grinding Frequency

Mill No.	Stripping method	Hours between grindings	Lb. between grindings
1	Roll Continuous	192 288	3,000 4,600
3	Roll Continuous	— 5 mo.	2,660 —
4	Vacuum	200	1,400 to 1,800
5	Vacuum	200	1,500
6	Roll	300	3,300
7	Continuous	240	2,880
8	Continuous* Vacuum	1,872 (flats and doffers) 3,744 (cylinders) 200	13,478 to 26,208 26,956 to 47,174 1,440 to 2,520
10	Roll	15 days	4,800 to 5,000
11	Vacuum	288	3,124
12	Continuous	1,440	17,280
13	Roll	200	3,000
14	Vacuum	240	3,600
15	Roll	245	3,430
16	Vacuum Roll	300 260	3,000 2,600
18	Roll	168	2,800
19	Vacuum (roll-top cards)	550	18,000
20	Continuous	175	—
21	Roll	140	2,800
22	Continuous** Vacuum**	456 456	3,650 3,650 to 5,472
23	Continuous Roll	288 288	— —
25	Vacuum	220	—
26	(Metallic clothing. Do not grind. Roll strip once per wk.)		
27	Vacuum	190	2,400

* Strip cylinders with roll every 144 hr.; doffers every 24 hr.
** Strip with roll every 144 hr.

TABLE III—Stripping Methods and Grinding Frequencies

	Zero hr. after grinding	288 hr. after grinding	320 hr. after grinding	448 hr. after grinding
REGULAR				
Nep count	113.4	122.3	198.4	247.0
Trash count	63.9	58.5	88.0	94.2
Cylinder and doffer strips %	.56	.78	.75	.83
Card fly	1.19	1.42	1.28	1.34
Flat strips	1.77	1.90	1.77	1.94
Total %	3.52	4.10	3.80	4.11
CONTINUOUS				
Nep count	103.5	122.6	169.3	247.7
Trash count	55.2	63.3	79.6	104.2
Cylinder and doffer strips %	.24	.23	.22	.26
Card fly	1.20	1.41	1.29	1.38
Flat strips	1.55	1.57	1.50	1.65
Total %	2.99	3.21	3.01	3.29

TABLE IV—Variation at Different Drawing Speeds

I.	Breaker		Finisher	
	150 ft./min.	190 ft./min.	150 ft./min.	190 ft./min.
Average % variation	29.8	24.9	34.6	33.2
Maximum % variation	38.4	31.6	45.4	45.5

Test run on 4-roll metallic drawing.

II.	Finisher drawing	
	110 ft./min.	165 ft./min.
Average % variation	35.0	35.0
Maximum % variation	53.8	35.0
Ends down per M del. hr.	46	41

Test run on 2-line metallic—2-line cork covered rolls.

New Officers

Members elected to the executive committee at the spring meeting of the Textile Operating Executives of Georgia and their tenure were:

Geo. D. Baker, superintendent, Pacolet Mfg. Co., No. 4, New Holland, Ga., 2½ yr., succeeding E. F. Robbins, manager, Griffin Mill, Thomaston Mills, Griffin, Ga.

E. F. Robbins, 1½ yr. to fill the unexpired term of Leon E. Macomber, manager, Aldora Mills, Barnesville, Ga., resigned.

Saco-Lowell two-section W-3 waste opener. Through this, we run all roving waste from fly frames and all spinning wastes.

"The vertical opener is the last machine in our cleaning line. Following it, we have 36-in. feed hoppers equipped with Sargent combs. At this point, we feed our reworked waste back into the regular stock.

"At the cards, we mix our lap waste and card front waste. These wastes and our drawing waste are fed back through the waste hopper in the same state as received from the card room.

"We are operating now with the following waste percentages:

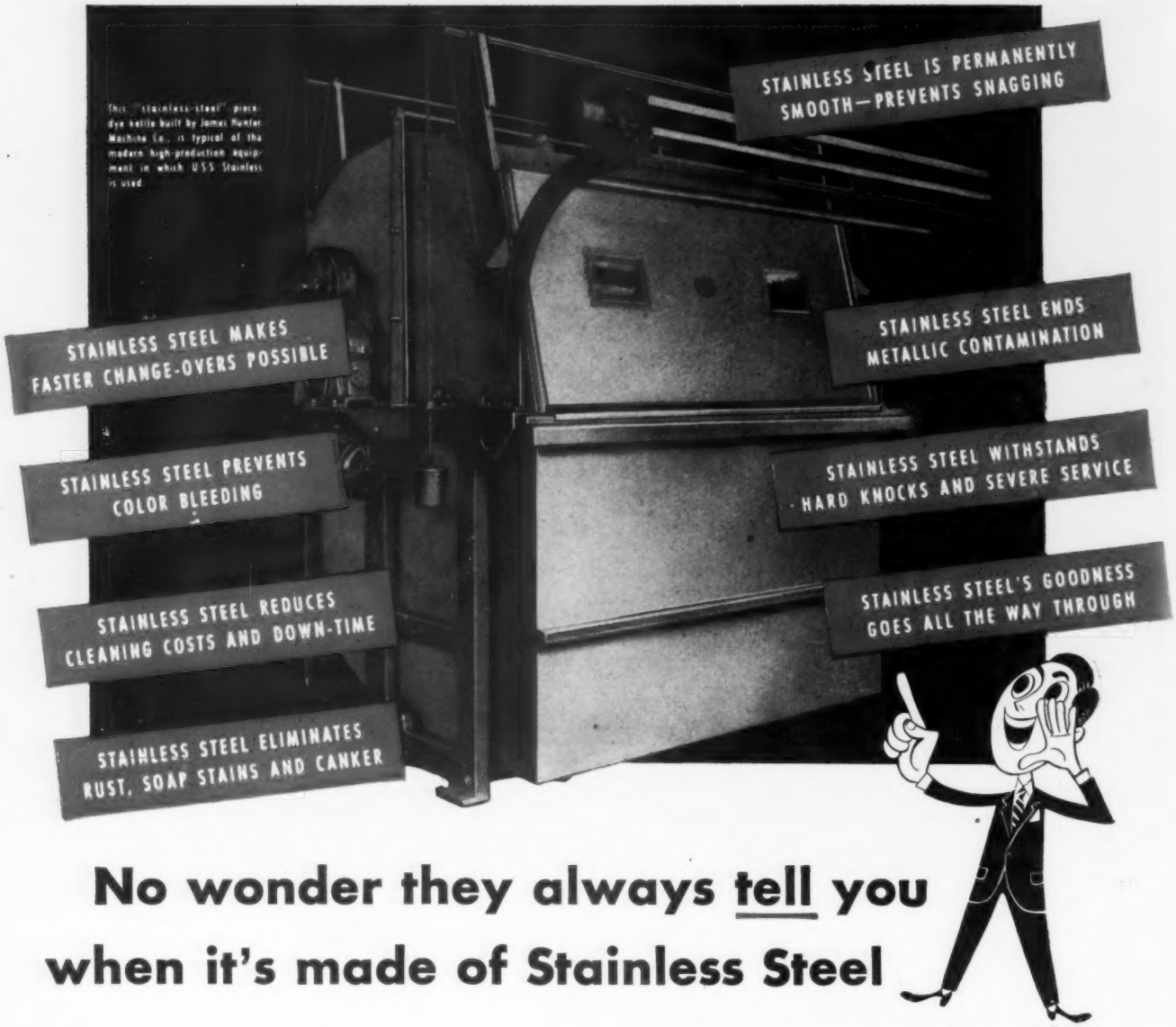
Card lap waste	1.242%
Card front waste	.327
Drawing waste	.274
Intermediate soft waste (drawing sliver)	.206
Intermediate hard waste, including waste from cleaning up bad work sent back from spinning	.081
Total	2.13%

In the discussion from the floor, a representative from this mill stated that it cards 1 5/32-in. Middling cotton at the rate of 12 lb. per hr. Card lap waste is held at the low figure of 1.242% by their practice of running the tail of the lap through the card rather than breaking off a yard of it, as is the practice in most mills.

The practice of running the tails through was adopted after considerable experimentation. The usual objection to carding the tails is that hard, folded tails sometimes knock down the mote knives or damage the lickerin and contribute to unevenness of sliver weight. The representative of Mill No. 10 stated that if the lap pin is pulled when the lap is small and the tail dropped to the floor, the wrinkles that might cause serious damage will be straightened out by the time they reach the feed roll.

Mill No. 26: "Our reworkable waste from cards is kept in a box on each job and weighed at the end of each

(Continued on page 226)


This "stainless-steel" piece-dye kettle built by James Hunter Machine Co., is typical of the modern high-production equipment in which U·S·S Stainless is used.
STAINLESS STEEL IS PERMANENTLY SMOOTH—PREVENTS SNAGGING
STAINLESS STEEL MAKES FASTER CHANGE-OVERS POSSIBLE
STAINLESS STEEL ENDS METALLIC CONTAMINATION
STAINLESS STEEL PREVENTS COLOR BLEEDING
STAINLESS STEEL WITHSTANDS HARD KNOCKS AND SEVERE SERVICE
STAINLESS STEEL REDUCES CLEANING COSTS AND DOWN-TIME
STAINLESS STEEL'S GOODNESS GOES ALL THE WAY THROUGH
STAINLESS STEEL ELIMINATES RUST, SOAP STAINS AND CANKER

No wonder they always tell you when it's made of Stainless Steel

WHENEVER they use Stainless Steel in their equipment, makers of textile machinery never fail to *emphasize* that fact. They know there's no quicker way to let you know that it is made of the best material available . . . that it won't rust or corrode, will prevent off-color runs, will reduce maintenance and repairs, and will out-last and out-perform other construction.

The money-saving advantages of Stainless Steel have been well proved in the past few years of high pressure operation. That is why in today's new equipment, especially designed to speed up mill operation, Stainless Steel is being used in greater amounts and in more places than ever before.

Although it costs more—Stainless Steel has shown that it can do so much more, do it so much better and lasts so much longer that it is, in many cases, by far the cheapest material to use. Particularly is this true when U·S·S Stainless Steel is used.

In this perfected, service-tested steel, equipment builders and equipment users are sure of obtaining all the superior properties of Stainless Steel at their *best*. Consistently uniform, of fine finish, excellent in fabricating qualities, U·S·S Stainless responds readily and uniformly to the most advanced manufacturing techniques . . . insures the finest results in service. So if you want top performance from your equipment just add "U·S·S Stainless preferred" on your next equipment order. More than likely your equipment builder already uses it, but it pays to be sure.

AMERICAN STEEL & WIRE COMPANY, CLEVELAND, CHICAGO & NEW YORK
CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS UNITED STATES STEEL

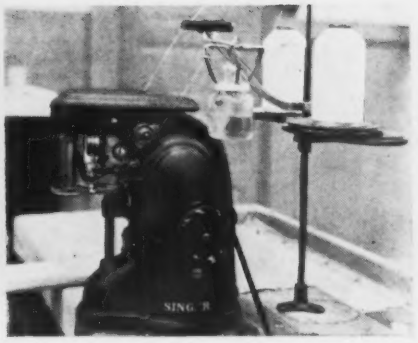
U·S·S STAINLESS STEEL

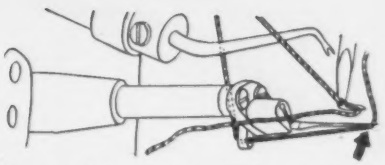
SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

8-732

UNITED STATES STEEL

Proper tension *on the stocking between the seamer's hands and the uncurler will prevent the fabric from rolling at the selvages.*



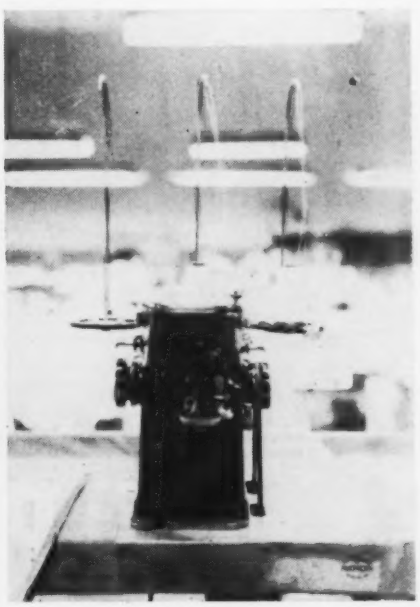


Thread lubricant *is applied by a felt wick in the jar. The needle thread passes over the wick. The lubricant makes the thread more pliable so that it will pull closer to the needle, as indicated in the inset sketch.*

NYLON-SEAMING Techniques Refined for 10 and 15 Denier

HIGHLIGHTS: *Many defective stockings can be avoided by seaming with two threads instead of three—Lubricating the needle thread eliminates picks along the seam—A 10-den. stocking should be seamed with 18 stitches per in. at a machine speed of 4500 rpm.*

The uncurler *on a Singer machine can be placed in the most efficient position for the worker by turning the machine 20° to the left.*



The uncurler *on a Union Special machine is built off center, which places it in approximately the working position of a Singer machine mounted 20° off square.*

By H. B. LeFEAUX

SEAMING HAS ALWAYS BEEN CONSIDERED one of the major operations in the manufacture of full-fashioned hosiery. With the current trend to extremely fine yarns, such as 10 and 15-den. nylon, most of the problems of seaming have been intensified.

Probably more production bottlenecks occur at the seamers than at any other point of the flow of stock. Many plants have installed new seaming machines and trained new operators in order to offset the below-normal production of hosiery.

However, a few refinements in the technique of seaming can go far toward stepping up steaming production and quality.

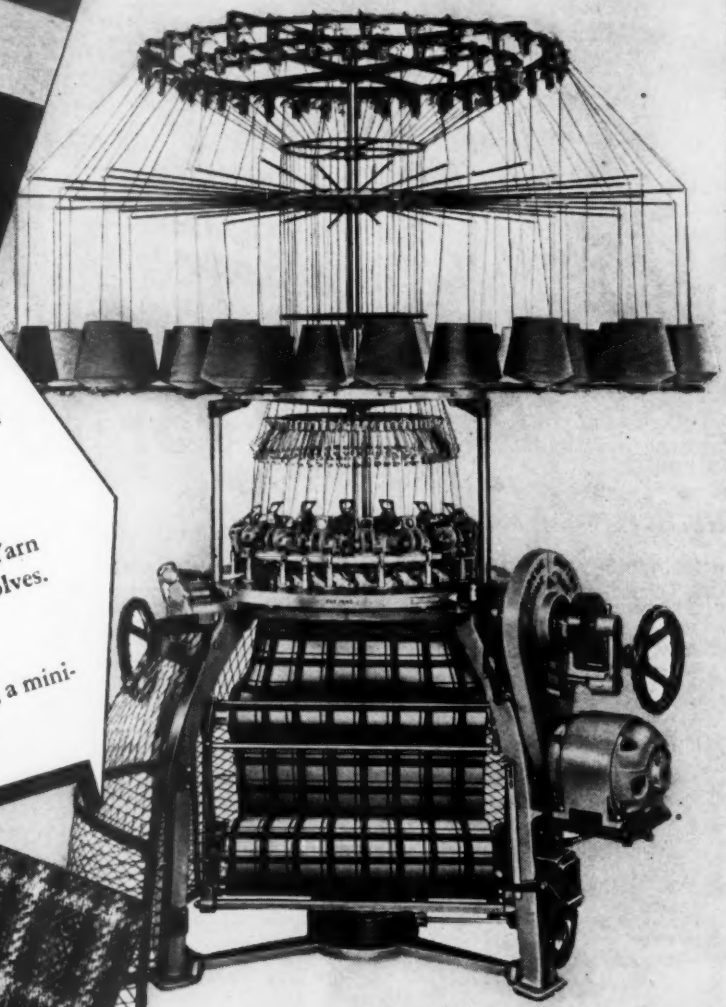
Usually, the seamer actually handles a stocking more than any other operator. It is of great importance that the seamer's hands be kept in the best condition possible. Many of the tiny pull threads that make seconds of stockings can be prevented by expert care of the seamer's hands.

Wrinkling at the uncurler is a common fault that can be easily overcome. Of course, the tendency to wrinkle or roll along the selvage of the hosiery fabric is done due to the excessive weight used on the knitting machines in order to knit a clear fabric. The

(Continued on page 206)

VARIABLE STRIPES AND PLAIDS PAY WITH MODEL SA*

Supreme's New Automatic Variable Striper



UNIQUE!
A knitting machine on which you can automatically select and vary height of stripes and run pattern wheels at the same time.

REVOLUTIONARY!
Drum striping feeds are stationary. . . . Yarn stand is stationary. . . . The cylinder revolves.

A SUPER PRODUCER!
Gives 100% faster production. 32 feeds, a minimum of 16 feeds knitting four colors.

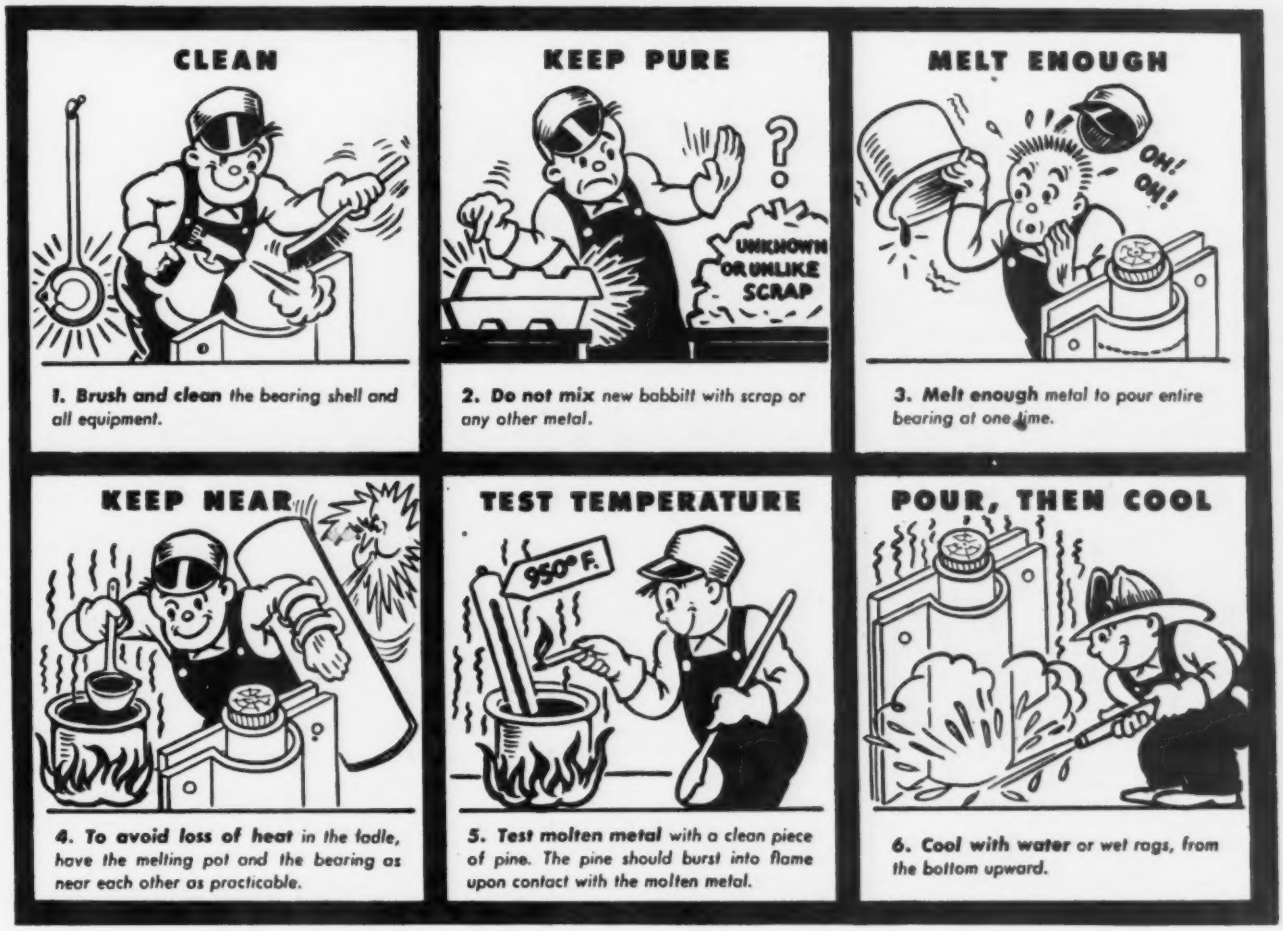
*Patent Applied For

SK-110

SUPREME

KNITTING MACHINE CO., INC.

105 JOHNSON AVE., BROOKLYN 6, NEW YORK, N. Y.


CLEAN
1. Brush and clean the bearing shell and all equipment.
KEEP PURE
UNKNOWN OR UNLIKE SCRAP
2. Do not mix new babbitt with scrap or any other metal.
MELT ENOUGH
OH! OH!
3. Melt enough metal to pour entire bearing at one time.
KEEP NEAR
4. To avoid loss of heat in the ladle, have the melting pot and the bearing as near each other as practicable.
TEST TEMPERATURE
950° F.
5. Test molten metal with a clean piece of pine. The pine should burst into flame upon contact with the molten metal.
POUR, THEN COOL
6. Cool with water or wet rags, from the bottom upward.

POURING BEARINGS
Requires Proper Technique

HIGHLIGHTS: *Life of repoured babbitt bearings depends on metal and pouring technique—A temperature of 850° to 950° F. gives good results.*

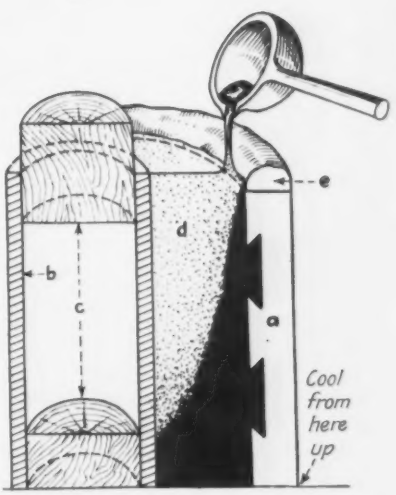
By F. X. KINZIE, *Joseph T. Ryerson & Son, Inc.*

TO SECURE SOUND, dependable, long-life babbitt bearings—of which many are used in textile mills—it is necessary to observe a few fundamental rules for casting. Generally speaking, these rules are relatively simple and easy to follow. It is assumed, of course, that the bearing alloy selected for the job has the proper physical properties—hardness and compressive strength, freedom from segregation, and good grain structure—to give the service desired.

Many textile plants have skilled maintenance men who know from experience how to pour babbitt bearings with the assurance of getting satisfactory results; but in other plants, where only a few bearings are poured at infrequent intervals, it has been found that in a large number of cases no regular method of casting is employed. As a consequence, faulty bearings sometimes result that either fail quickly in service or fall far short of giving the long life expected.

It is not necessary to mention all the ways in which babbitt bearings can be successfully poured. The equipment and fixtures required will vary from shop to shop; but regardless of their nature, they can usually be devised without difficulty in the average plant. The biggest single factor to keep in mind is heat transfer:

(*Continued on page 208*)



Warm bearing shell *a to about 200° F. to drive out all moisture. Use thin-walled mandrel b where possible, and close the ends of the mandrel with wooden plugs c to prevent loss of heat. Fill the bearing area d with molten metal to the top of waste head e.*

SERVICE . . .

AS YOU WANT IT . . .

WITH . . .

Tailored Color

Florence Tailored Color is literally an on-the-platter Service . . . **complete** processing of cotton, wool, synthetic and blended yarns including dyeing, bleaching, finishing and winding.

Florence service combines the scientific facilities and skilled chemical knowledge of our laboratory colorists who KNOW the art of analyzing color and the processing of dyed yarn **tailored to your exact color requirements!** The color you specify, you get; in the shade, colorfastness and quality you must have

This scientifically controlled **Quality** in **Florence Tailored Color** is something "extra." It assures quality products for your customers.

Either you supply the yarn to be processed or, if possible, we obtain the quality you want and tailor-color it to your specifications. In each instance you get **Tailored Color.**

Specify **Florence Tailored Color** and get Service . . . **as you want it!**

FOR TAILORED COLOR WRITE

FLORENCE THREAD CO., INC.

RIVERSIDE • NEW JERSEY

Package Dyers and Processors of Cotton, Wool, Synthetic and Blended Yarns

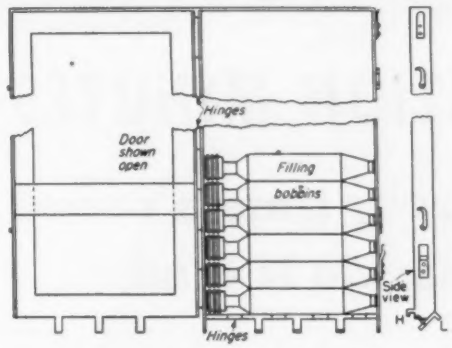


Fig. 1. Tray is shown open to illustrate how bobbins fit into it.

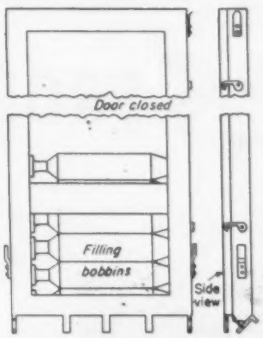


Fig. 2. Tray is closed and is ready for storage or transportation to loom.

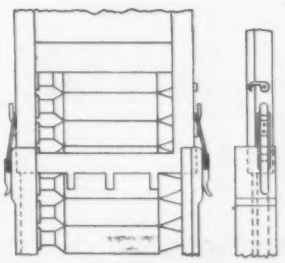


Fig. 3. Mounting device for holding tray to loom magazine is a pair of clips.

Tray Suggested to Speed BATTERY FILLING

HIGHLIGHTS: *Magazine capacity increased — Operations combined— Proposal offered for 4-cell stationary-magazine bobbin-changing looms.*

By ALFRED R. KANDLER
Philadelphia, Pa.

AN IMPORTANT COST FACTOR in the weave room is the battery hand, especially when coarse filling is used and a bobbin runs only a few minutes. In some cases, a battery hand may be needed for every weaver.

It seems obvious that filled bobbins will always have to be brought from the winding room to the weave room by some means, and they will have to be placed in the loom. The following operations are involved in this process:

1. Filled bobbins are taken off the winding machine's spindles and put on a shelf or in a box. On automatic winding machines, they are dropped into a box.
2. Filled bobbins are taken from the shelf or the boxes and put into loom boxes or onto pin boards. They also should be inspected during this operation, and bad bobbins should be discarded.
3. The loom boxes are transported to temporary storage between the winding room and the weave room.
4. The boxes are transported to temporary storage near the loom, where the bobbins will be used.
5. The bobbins are taken from the loom boxes and placed in the magazine.

While a handful of bobbins is taken from a box at one time, each bobbin has to be put into the magazine individually. Operations 2 and 3 some times may be eliminated; but, when automatic winding machines are used, operation 2 will have to be carried out. Not much can be done about operations 1 and 4. Thus, operation 5 is left for further consideration. This operation requires more time than any of the others, because each bobbin has to be handled individually. To a certain extent, this is also true of operation 2, especially when the bobbins are inspected. It seems helpful to consider combining operations 2 and 5, thus to eliminate one handling. In the following description, a method is suggested which may be useful toward that end.

SPECIAL TRAYS. Instead of using loom boxes, bobbins can be put into special trays as shown in Figs. 1 and 2. These trays should be made of a light-weight metal and have a solid-sheet-metal back. The front should be only partly covered in order that the bobbins may be visible. If the trays are made to hold 24 bobbins, they should be about 33 in. long and 1½ in. high. The front and the back parts are fastened with hinges which allow the tray to be opened in order to fill in bobbins.

A number of these trays are piled one on top of the other, and the lid of the first one is opened. Bobbins are taken from the winding machine's boxes with the left hand. While the right hand pulls off about 2 yd. of filling, the left hand places the bobbins in the tray with the filling ends hanging to the floor. At the same time, the bobbins are inspected.

When the tray is filled, all the ends are grasped at one time and led around the hook, *H*, Fig. 1. Then the lid is closed and secured with hooks at the side as shown in Fig. 2. Finally, the filling ends are led to spring, Fig. 1, under which they are clamped in order to be held firmly in place. Then, the tray is placed on a truck for transportation to the weave room. The lower end of the tray has an opening through which the bobbins will come out after the tray has been set up in the loom. It also has a locking device which prevents the bobbins from falling out during transportation. The lock is kept closed by springs, as shown in Fig. 1.

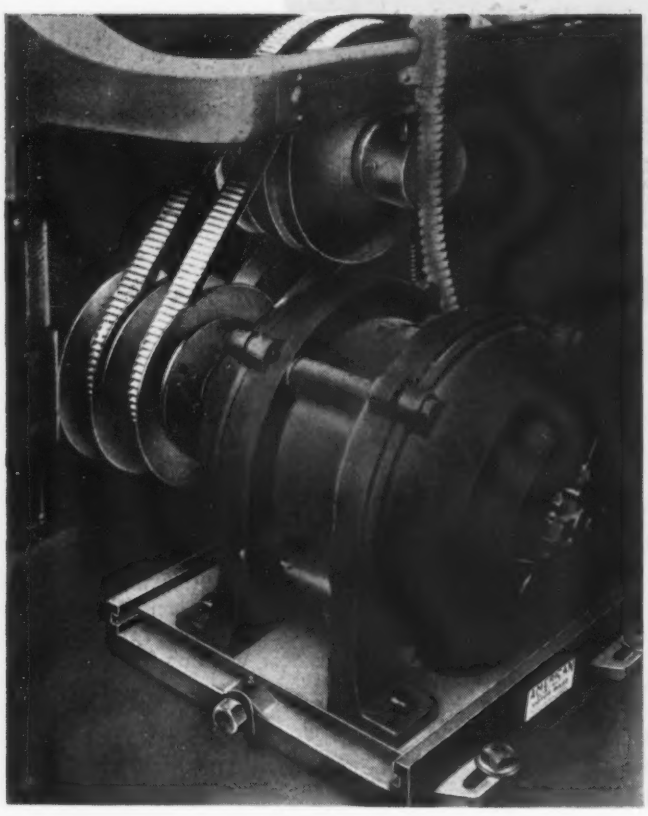
This type of battery filling is intended to be used on a box loom with a four-cell stationary bobbin-changing magazine after the tops of the magazine frames have been adapted for the purpose. The bobbin slides must be widened sufficiently to allow a tray to be inserted. There also will have to be a catch for the lever, *L*, Fig. 1.

When the tray is set up on the

(*Continued on page 192*)

SAVED! 25 PRODUCTION MINUTES

. . . every time a speed change is made!



On how many of your textile spinning jobs are quick speed changes vitally necessary for top quality and high-speed production? Now, virtually "tailor-made" to fit those jobs, the new *American* Wide-Range Adjustable-Diameter Drive gives you 6 cost-reducing advantages:

- 1. Adjusting mechanism permits quick, easy shifting of all flanges at once. Single lock screw prevents flange movement while sheave operates.
- 2. Smooth, trouble-free operation is assured because each individual flange, as well as the entire assembly, is dynamically balanced.
- 3. Freezing of moving parts is eliminated and noise and vibration are reduced because the sheave flanges are mounted in rubber bonded to the sheave hub.
- 4. *Permanently* easy to adjust—the adjusting mechanism consists of stainless steel screws connected with specially constructed gears—enclosed in a dust-proof housing.
- 5. Shorter overall length saves up to 1¾" in space.
- 6. Low initial cost.

For higher standards of production and quality, find out more about the new *American* Wide-Range Adjustable-Diameter Drive, now. Your note starts complete information on its way. Just ask for the *American* Wide-Range Adjustable-Diameter Drives Bulletin.

JOB: Spinning Cotton Yarn on a Long Draft Spinning Frame.

PROBLEM: Frequent speed changes were necessary to maintain production. With fixed V-Belt previously used, 30-60 minutes were consumed changing pulleys.

SOLUTION: Looking for a way to cut machine downtime, the shop supervisor installed an *American* Wide-Range Adjustable-Diameter Drive.

RESULTS: Speed changes are now made in 2-5 minutes. Production is up because downtime is appreciably reduced—quality is improved because desired speeds are maintained.

The American Pulley Company

4238 WISSAHICKON AVE., PHILADELPHIA 29, PA.

Southern SAFETY Conference Learns Practical Programs

HIGHLIGHTS: *Mills from 14 southern states represented at Southern Safety Conference—Master mechanic is vital to safety program, mill men say—Smoking in rest room favored by several mills—Program for accident prevention at Spartan Mills—Unusual record at Sycamore Plant of Avondale.*

A lifesaver is honored — Ray Ketchmark, (left), of National Safety Council presents medal to Claude Bassett (right), of Avondale Mills, Sylacauga, Ala., for saving life of Jesse Hudgins (center) when latter was victim of near-electrocution.

NINTH ANNUAL SOUTHERN SAFETY CONFERENCE and Exposition, held in Birmingham, Ala., Mar. 7, 8, and 9, was attended by representatives from mills in 14 southern states. Two notable awards were made to representatives from Avondale Mills of Ala. The National Safety Council's President's Medal was presented to Claude L. Bassett, Sylacauga, Ala., by Ray Ketchmark, staff representative of the council. Mr. Bassett received the medal for saving by artificial respiration the life of a fellow worker who had received an electrical shock.

A certificate of merit was awarded A. W. Bell, superintendent, Sycamore Plant, Avondale Mills, by a representative of the American Mutual Liability Insurance Co. The certificate was awarded for Sycamore's record of operating 6,359,672 man-hours without a lost-time accident.

In a round-table discussion on several phases of safety, it was pointed out that the master mechanic is a key figure in the safety program of a mill. Ways to enlist the active cooperation of the master mechanic were given as follows:

1. Make him feel that he is as important to the program as is the safety director.
2. Impress upon him the value he can be to the program.
3. Give him ideas and let him develop them.
4. Have him attend all safety meetings.
5. Congratulate him for his part in the program at every opportunity.

SAFETY REPAIRS FIRST. A representative of one mill described a routine in which the master mechanic has no choice but to cooperate with those charged with the safety program. Shop work is done according to a work order signed by the department head requesting it. A work order signed by the safety director is given preference over any other work by the shop crew.

Another mill does not label its shop safety work as such, but considers it a part of mill maintenance. Thirty-two workers in the mill serve as inspectors. Recommendations made by these inspectors are written and turned over to the master mechanic, who determines the proper man in his crew to do the work recommended. The recommendation is turned over to that man. Both the master mechanic and the inspector who originated the recommendation follow up until the work has been done.

Accident frequency at this mill has been reduced from 9.0 to 0.29, and the mill is now nearing 3,000,000 man-hours without a lost-time accident.

The question of permitting smoking in the plant evoked considerable interest at the meeting.

Smoking in mill rest rooms was started in 1942 at Spartan Mills, Spartanburg, S. C. Less supervision has been required since the practice was installed, it was said.

Another mill reported that it has adopted the same practice and has found it satisfactory so far.

An immediate reduction in the number of mill fires was noticed by one mill that provided safety matches for workers.

Abstracts of two papers follow:

Preventing Accidents Is Vital to Mill Management

(Abstract of conference paper by J. M. CAUGHMAN, Superintendent, Spartan Mills.)

We are all interested in the prevention of accidents. In particular, we are interested in preventing accidents to textile workers. Four factors act as spurs to keep this interest alive: Cost, moral obligation, public viewpoint, and the fact that the Workmen's Compensation Act makes the employer liable for accidents.

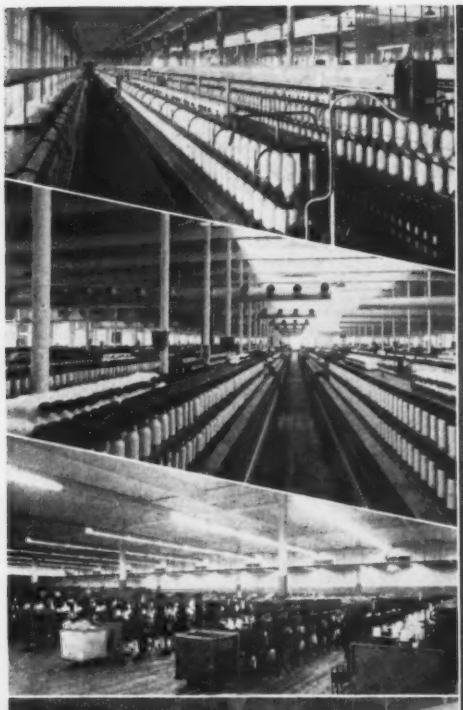
First, we must provide a safe working place. Accidents happen wherever people are brought together, especially where people and machines are working together. Owners of machines must, and do, accept the responsibility for providing necessary safeguards. Today's machines are designed and bought with safety of the employee a major consideration. That the employer and his representatives have done a good job in this respect is attested by the fact that most accidents now are not caused by machine faults or unguarded machines. Rather, they are caused by unsafe practices on the part of the employees.

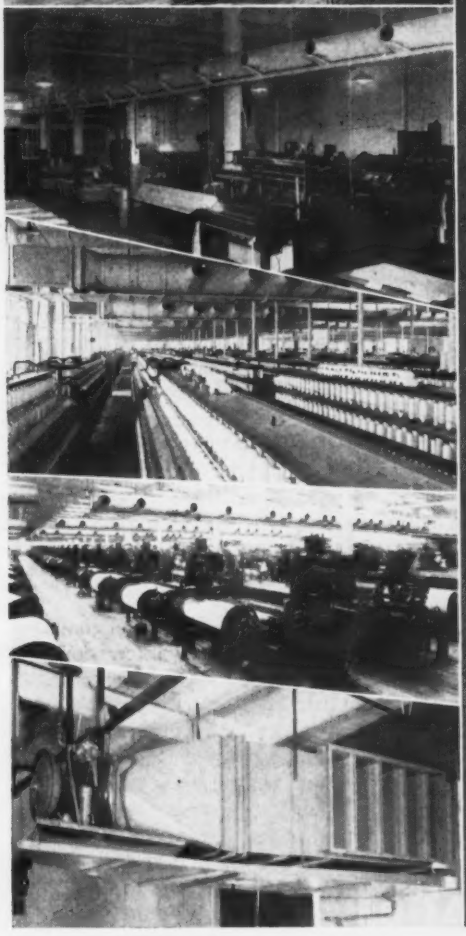
Beside the cost involved in making the plant and machinery safe, there is also the cost of liability insurance. Management is well aware that unless adequate means for preventing accidents are set up, insurance rates will go up. Furthermore, accidents cause loss of production and sometimes damage to product and machines. It is, therefore, "good business" to hold accidents at a minimum.

MORAL OBLIGATION. Employers have a moral obligation to worker, community, and society. Management, now more than ever before, appreciates the human assets represented by the skill and "know how" of the worker. Industry is an inextricable part of the social order, and accident prevention is an activity directed toward improving the lot of men and women in industry. While the cost of accidents is important to a company, it is much more important to the worker himself and his dependents. Pain, suffering, and wrecked lives are not necessary by-products in industrial plants.

Public opinion must also influence the employer and management in accident prevention. Unless a plant enjoys the reputation of being a safe place to work, it will not be able to

(*Continued on page 215*)





INDUSTRIAL AIR CONDITIONING

Featuring

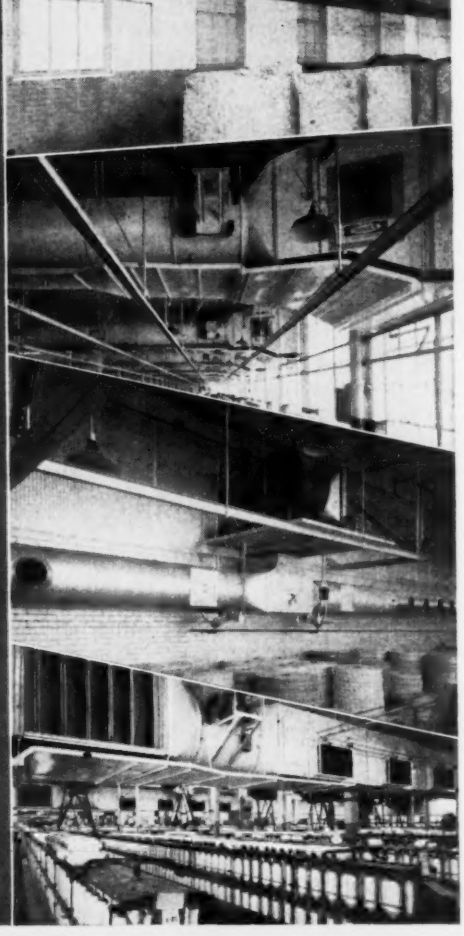
FLEXIBILITY
ECONOMY
DEPENDABILITY

For 33 years The Bahnson Company has pioneered in the development of industrial humidifying and air conditioning equipment.

At the same time, The Bahnson Company has built an organization of engineers, installation and service personnel which enables us to offer our products as part of a complete air conditioning service.

In tailoring our installations to meet specific problems on thousands of industrial jobs, we have been guided by three principles: Flexibility—Economy—Dependability.

Write for Bulletin No. 333



Bahnson System

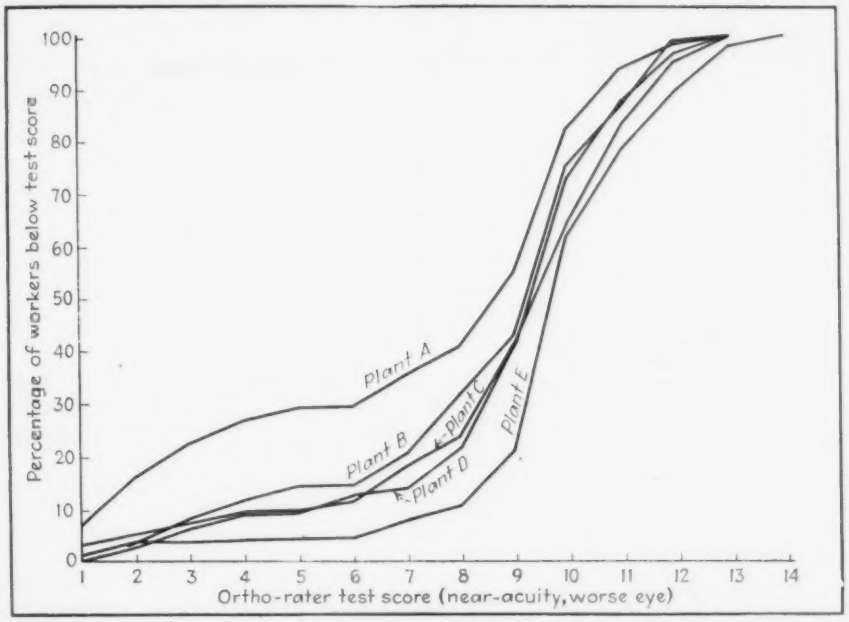
POSITIVE CIRCULATION — LOWER OPERATING COST

AIR CONDITIONING ENGINEERS

THE BAHNSON CO WINSTON-SALEM, N. C.

886 Drewry St., Atlanta, Ga. 93 Worth St., New York City 703 Embree Crescent, Westfield, N. J. 553 S. Figueroa St., Los Angeles, Cal.
W. J. Westaway Co., Ltd., Hamilton, Ontario A-3 Virginian Apts., Greenville, S. C.

VISION STANDARDS Must Be Related to Mill's Own Loopers



Difference in score made by loopers in five hosiery mills indicates wide variation. If all below score 9 were isolated, plant A would identify 55% of its loopers while plant E would identify only 21%.

HIGHLIGHTS: *Test of near-acuity of 700 loopers from five hosiery mills discloses impracticability of setting one standard for all five mills—Testing and treatment over several years can raise visual level of workers—This level has direct relationship to worker efficiency.*

By N. C. KEPHART, Ph. D.
Div. of Applied Psychology, Purdue University, Lafayette, Ind.

PROPER VISION FOR THE JOB is a concept that has gained acceptance in recent years. Repeated studies have shown that visual skills required of the worker for successful performance vary from job to job[2, 3, 5]. The fact would appear to be well established that no single standard of "good" vision is applicable in the textile or any other industrial situation. The concept of adequate vision must be limited to the job or jobs in question.

The most satisfactory method of determining minimum visual skills required by a given job is through statistical comparison of visual test scores of poor workers on the job with visual test scores of good workers on the job[4]. When such a comparison is made in different plants, certain variations in the amounts of visual skills that are characteristic of the good worker are found from plant to plant among workers employed on the same or similar jobs.

One of the factors accounting for this variation appears to be the difference in the visual level of the population as a whole in each of the plants. If there are major differences in the visual skill level of the total population between the plants in question, one would expect to find statistically a difference in the minimum visual skills characteristic of good workers.

STUDY OF HOSIERY LOOPERS. In order to test this hypothesis, samples of the visual skills of workers on a single job were obtained from five different plants. The job here studied was the job of hosiery looper. This job involves joining the two portions of the toe and lower part of the heel of full-fashioned hosiery, or closing the opening in the toe of seamless hosiery. The operator sets the spool of thread through various guides and tension disks and threads the needle of the machine. She steps on a treadle to rotate a dial containing looping points and to start the sewing movement of the needle. She must set corresponding loops of the two parts of the toe and the heel on the looping points of the rotating dial. This dial carries the stocking through the mechanism that automatically joins the two parts of the toe and the heel and trims the edges of the seam. The operator must then remove the looped stocking from the dial of the machine. She must also replace an empty spool on the spindle and tie the end of the new thread to the end of the thread still in the machine. The points over which the thread of the stocking must be inserted are very fine, and the operator must see that each individual thread in the stocking is placed over its corresponding needle.

This job of hosiery looping involves close, continuous, and precise near-point work. It has been repeatedly shown that near-point acuity is an important factor contributing to success among these workers. A striking relationship between near-point acuity and production records has been observed in different plants.

Five samples of workers on the job of hosiery looper were obtained from five different hosiery plants. The number of cases in each plant was as follows: Plant A, 163; Plant B, 84; Plant C, 182; Plant D, 158; Plant E, 113. These samples appear adequate to give a reliable picture of the visual skills of workers on this job as found in each of the separate plants. The data were obtained from the Occupational Research Center at Purdue University.

These workers were given the battery of visual tests included in the Ortho-Rater*. Since the job of hosiery looper involves near-point acuity to a high degree, the acuity score at the optical equivalent of 13 in. with the worse of the two eyes was selected as the most significant single test for investigation. The test scores ob-

(Continued on page 242)

* The Ortho-Rater is a visual-performance-testing device manufactured by Bausch & Lomb Optical Co. for the visual classification and placement of industrial employees.

THE worst part of slasher troubles is that they multiply throughout the mill — as one slasher services many looms. Poorly prepared warps mean shedding and breaking in the weave room if too dry . . . mildew if too wet.

At this major Southern mill, slasher troubles have been eliminated. Consistently uniform warps are produced all the time thanks to a Brown Slasher Control System.

This system includes an exclusive type size level control, as well as control of eight important temperatures: the temperature of the size and each of the seven drying cylinders. Independent control of each cylinder assures maintenance of the proper temperature gradient from cylinder to cylinder.

Proof is in the results. Uniformly conditioned warps boost production in both the slasher room and weave room.

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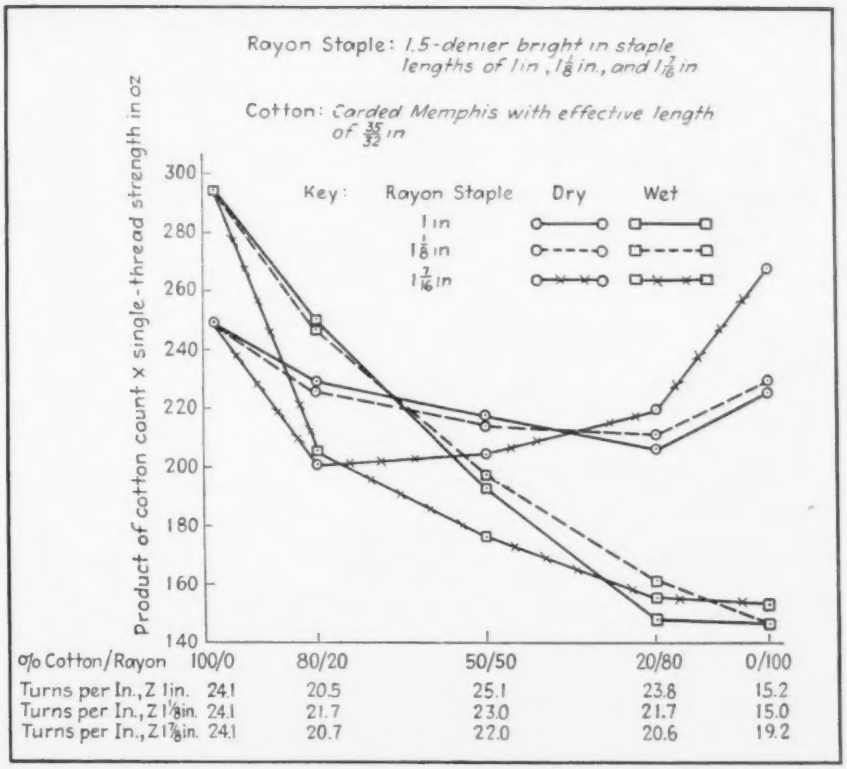


% Cotton/Rayon	100/0	80/20	50/50	20/80	0/100
Turns per In., Z 1 in.	24.1	20.5	25.1	23.8	15.2
Turns per In., Z 1⅛ in.	24.1	21.7	23.0	21.7	15.0
Turns per In., Z 1⅞ in.	24.1	20.7	22.0	20.6	19.2

HIGHLIGHTS: *Rayon-staple developments are many—Aerodynamics holds key to fiber dispersal and control—Direct spinning offers possibilities for crepe yarns—Rayolanda used on cotton machinery.*

***Effect of staple length and blend** on the single-thread strength of a 36/1 cotton-rayon yarn is shown by the sample at left of the many charts that Mr. Ashton's organization has developed. Note on this chart that in the case of the longest rayon staple the dry strength of the all-rayon yarn is greater than that of the all-cotton yarn. The weakest yarn in this case is the 80/20 cotton-rayon blend. Even with the other staple lengths, several blended yarns have lower strengths than either the pure-cotton or pure-rayon yarns. The chart also indicates that, in all staple lengths shown, the wet strength declines rapidly with the increased percentage of rayon and that the loss curve is steepest in the case of the longest staple.*

SPUN-DYED STAPLE
Used in Cotton-Rayon Blends

By HAROLD ASHTON
Manager, Arrow and Westcroft Mills
Courtaulds, Ltd., England

TWO PROBLEMS appear to be outstanding in rayon-staple development: (a) the working out of a satisfactory sliver-making technique over the full range of desirable fiber dimensions, and (b) the development of long drafts with control also over the full range.

Desirable fiber dimensions are regarded as including a free range over staple lengths of from 1 to 4 in. at least, with a filament denier range of from 1 to 8, in any combination. This minimum range is essential in order to command the full potential of staple fibers, of whatever kind, in finished performance. It involves a close study of fiber character, staple length, and denier in relation to the yarn-count range over which they can be processed.

The limitations so far revealed with respect to process, staple, or denier in modified carding methods or tow-to-top conversions compel contemplation of the possibility of working out some new or radically different approach to sliver-making. The requirements involve provision of a satisfactory fiber dispersal technique combined with a method of fiber condensation and sliver assembly. The key lies in the dispersal technique. It seems the solution is to be found only by close collaboration between the fiber manufacturer, whose task it is to produce fibers easily dispersible as individuals, and the textile technologists, together with the engineers, who must work out an application of aerodynamics to the dispersal and control of individual fibers in the mass. Work now proceeding in England on these lines shows more than a little promise of providing the answer.

The progress already made in the United States by your Inter- and Super-draft machines for preparatory stages and the Z-2 and apron drafting systems as applied to ring spinning convince me that we are within reach of a satisfactory method of combining long draft with control of a variety of staple lengths and deniers. However, one must first have command of the full range of fiber dimensions in sliver form to present to these processes.

DIRECT SPINNING. The limitations of the direct-spinning approach to spun-rayon production are many. The destruction of intrinsic fiber properties and the effects of this destruction on the performance of finished materials are serious handicaps. They may, however, be overcome—or at least minimized. Should it prove possible for the fiber manufacturer to close or narrow the price gap between suitable tows and baled staple, a very interesting position would at once arise. In the meantime, there are various uses in which direct-spun yarns may find an opportunity of capitalizing their defects as compared with spun-rayon yarns produced from baled staple. Such uses include combination yarns or spun-rayon crepe yarns, where shrinkage of direct-spun is useful.

Rayolanda is the Courtauld brand name applied to viscose-rayon staple chemically modified to render it amenable to dyeing with a wide range of

(Continued on page 212)

Abstract of paper presented before American Association of Textile Technologists.

Another Example

How Alemite Methods Cut Production Costs

Cuts Cost of Human Error to the Bone

Adds Productive Time to Machines with Faster, More Efficient Handling and Application of Lubricants

Your Lubrication Methods May Be More Antiquated Than You Suspect!

There you have it—the dilemma that faces many an oiler . . . maybe yours! The Alemite Representative is a specialist in simplified, modern methods of handling and applying lubricants. A five minute conference with him may be a revelation in new cost-cutting ideas. Write to Alemite, 1888 Diversey Parkway, Chicago 14, Illinois.

Most machines demand one or more different types of oils and greases at different intervals. That's where "human error" steps in to boost maintenance and repair costs. And that's where the Alemite Coloroute System steps in to control lubrication and prevent mistakes that cost you money and machine time.

With the Coloroute System, all lubricants and containers and lubrication equipment are color-marked to correspond with a color symbol at each lubrication point on the machine. The oiler can't miss a bearing, or use the wrong lubricant or lubricate at the wrong time. Thus, costly bearings don't fail because of faulty lubrication. It's just one of many ways Alemite Methods help to cut production costs!

The Alemite Representative can show you case after case where a time study analysis has proved that modern Alemite Methods eliminate costly, time-consuming handling of oils and greases. These same methods slash shutdown time for lubrication . . . completely mechanize lubrication from-barrel-to-bearing . . . add more productive time to machines. He can show you how to lubricate as many as 300 bearings from *one* central point while the machine keeps on producing! Get the facts!

ALEMITE

Another Product of STEWART WARNER

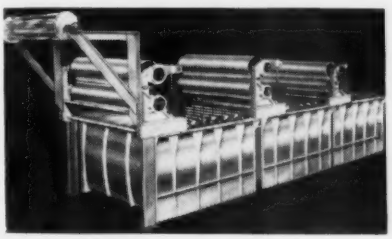
MODERN LUBRICATION METHODS THAT CUT PRODUCTION COSTS

TEXTILE Equipment NEWS

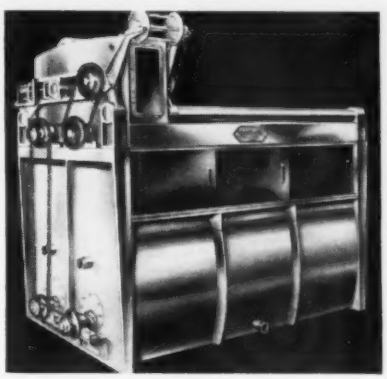
Tensitrol Development Permits

TENSIONLESS PROCESSING

HIGHLIGHTS: *New development applicable to ranges permits tensionless processing regardless of shrinkage or stretch—Principle based on overdrive of bottom rolls—Roll-surface design prevents adhesion—Application to continuous wool dyeing seen.*



Bottom rolls only *are driven at a speed in excess of maximum fabric shrinkage in Tensitrol units.*



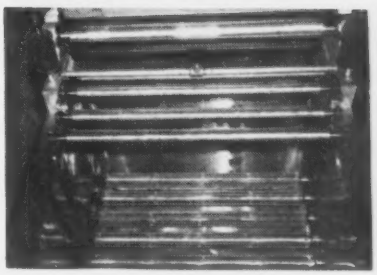
To reduce wear *by reducing the relative difference in speed of spools and roll, the top rolls in this rope washer are driven, but at a speed slower than the speed of the cloth.*

Tensitrol is the name of a new development by Rodney Hunt Machine Co., Orange, Mass., for continuous, high-speed processing of such fabrics as prints, acetate spun and filament fabrics, sheers, and crepes, on open-width washers without developing tension. Already applied to open-width and rope washers, the new development will permit tensionless processing of fabrics, regardless of shrinkage or stretch, or rate thereof, without any change in speed of any part of the machine.

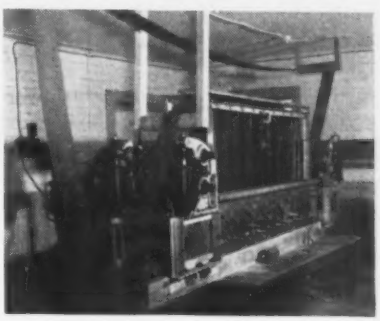
Tensionless processing is accomplished by the new Tensitrol development in an open-width washer by driving only the bottom rolls of the unit. These rolls are so driven that their surface speed exceeds the nip-roller speed by a percentage greater than the maximum percentage of shrinkage at any point of the cloth being processed. For instance, if the maximum shrinkage at any point of a fabric to be processed is 15%, the bottom rolls of the washer are driven at a surface speed approximately 20% greater than the surface speed of the nip at the end of the washer. Thus, the bottom rolls are continually slipping on the fabric, preventing the build-up of tension. The only pull exerted is that required to move the fabric along and to overcome friction of the top rolls—a negligible amount. Throughout the unit, the fabric is in a loose, relaxed condition; and minute changes in tension are instantly and locally relieved and equalized.

If slack develops at any roller, the loop lengthens, and the pull exerted on the fabric is lessened to a point where the fabric following the roller slows or stops. This slowing of the fabric causes the slack at the roller to be taken up. If tension starts to develop, the loop shortens and the roller imparts advancing movement to the fabric. This advancing movement, faster than the speed of the fabric, immediately relieves the tension. The fabric movement depends on the amount of slippage of the rollers; the slippage depends on the tightness or looseness of the fabric on the roller; amount of movement imparted is enough to dissipate tension but not enough to introduce slack.

To prevent adhesion of the tensionless cloth to the bottom rolls and winding of the cloth on the rolls, various roll facings are available—the particular design depending on the medium in which the rolls are used and the moisture content of the fabric being processed. These various "treads" usually take the form of cleats arranged in herringbone pattern to keep the cloth at full width. Another type consists of several herringbone-surface or spirally cut bars being mounted across and a short distance from the main roll.



Bars welded *to bottom rolls prevent adhesion of fabric in this unit.*



Wool is dyed continuously *in this pilot unit using the Tensitrol principle.*

Mill tests have shown that these cleats cause no damage even to delicate fabrics, as the excessive rotation causes enough circular water movement to actually prevent the cloth from coming in contact with the roll surface. This has also been true when steam is the processing medium.

In the rope washer, the bottom roll extending across the machine is similarly overdriven at a surface speed in excess of the maximum fabric shrinkage. Individual strands pass over indi-

vidual, freely rotating spools mounted on water-lubricated bearings on the top roll. The top roll carrying the individual spools is driven, but at a speed less than that of the spools, to reduce the relative difference in speeds between roll and spools, thus reducing wear. The rope washer is said to be capable of running at speeds of 300 yd. per min. or more, again without tension, tangles, loops, and snarls.

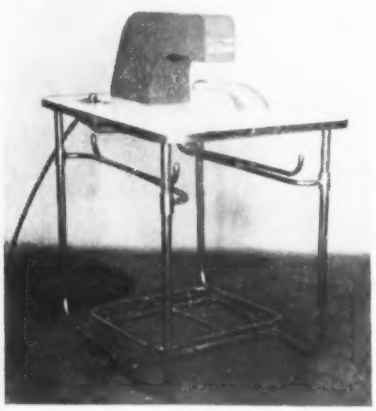
Flexibility and economy in amount of liquor used are provided by a jacketed false bottom shaped to fit around the bottom rolls.

Mill installations of the Tensitrol open-width washers have been undergoing tests for ten months. The Tensitrol rope washers are also undergoing mill tests at the present time.

The Tensitrol development is believed to be applicable to agers, continuous dyeing machines, the pad-steam process, continuous crabbing machines, recuperators, dryers, and to any other machine requiring holding capacity. Rodney Hunt plans further development on these applications.

As holding capacity is one of the major problems in continuous dyeing of wool fabrics, the Tensitrol principle has been applied to a pilot range to perform this work. The range consists of a 15-ton pad, a tensionless developer of 60-yd. capacity, a 7-ton wringer, a tensionless washer of 20-yd. holding capacity, a 15-ton extractor and a folder.

Mending Scars Removed From Hosiery



***Mending scars** are easily removed from hosiery by this new machine.*

A new hosiery processing machine, known as the Nylo-Therm, has been placed on the market for commercial use between mending and inspecting operations in hosiery mills and finishing plants, it was recently announced by the Nylo-Therm Co., Inc., 489 Fifth Ave., New York, N. Y.

By a simple process, Nylo-Therm removes mending scars from mended nylon hosiery and leaves a flawless stocking, thereby providing a greater yield in first quality hosiery. The machine uses heat to reorient the loops and reduce throwouts, especially in 10- and 15-den. stockings. The machine is mounted on a light-faced plastic-top table which occupies 3 sq. ft. of floor space. A pair of arms on both sides of the table can be unfolded into a locked position to hold trays of work to be processed on one side, and finished work ready for grading and pairing on the other side.

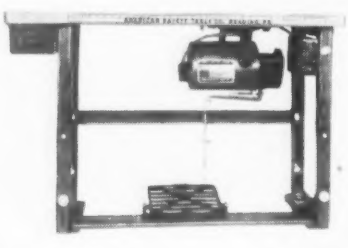
An operator can be taught in less than a half-hour to efficiently work the machine, the company reports. At the same time the operator presses out the mending scars, she also has the opportunity to examine the mended work, so that if any mis-menders are evident, they can be returned to the mender.

The Nylo-Therm has been in use as standard equipment for more than ten months in a number of mills such as Prestige, Inc., a hosiery-finishing plant in Philadelphia, and the Se-Ling Hosiery Mills, Nashville, Tenn., according to the manufacturer.

An experienced operator is said to be able to do between 38 and 50 doz. in an 8-hr. day. Out of this, better than 25% can be reflected into clear, flawless, first-quality stockings.

Present availability is ten to twelve weeks. The machines are sold without any royalty arrangement. The price per machine in groups of three or more is $550; less than three, the machine sells for $750, f.o.b. Philadelphia.

Motor Drive is Permanently Lubricated

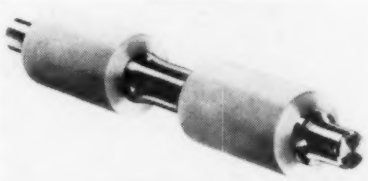


***Ball bearings** in this new motor drive are sealed and lubricated for 5 yr.*

A new Amco motor drive for industrial sewing machines with permanently sealed and pre-lubricated ball bearings has been announced by American Safety Table Co., Reading, Pa. The new drive is said to require no lubrication for at least 5 yr.

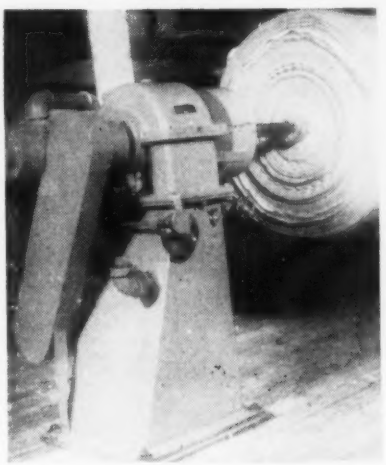
Other features of the drive are a quick belt release, a BX cable to wire the motor to the switch, and a friction and brake made of an Amco compound guaranteed for 5 yr.

Roll Covering Designed To Reduce Lapping-Up



A new Dayco roll covering, type SE, is now being introduced by the Dayton Rubber Co., Dayton, Ohio, and is being manufactured by its textile division, Waynesville, N. C. The covering is said to minimize lapping up, to reduce eye-browing, and to produce greater uniformity. Running tests are said to show fewer ends down, resistance to grooving and oil. The roll has perfect cushioning properties, according to the manufacturer, is not affected by humidity or temperature changes, and meets the most exacting requirements as to coefficient of friction.

Batcher Holds Constant Cloth Tension



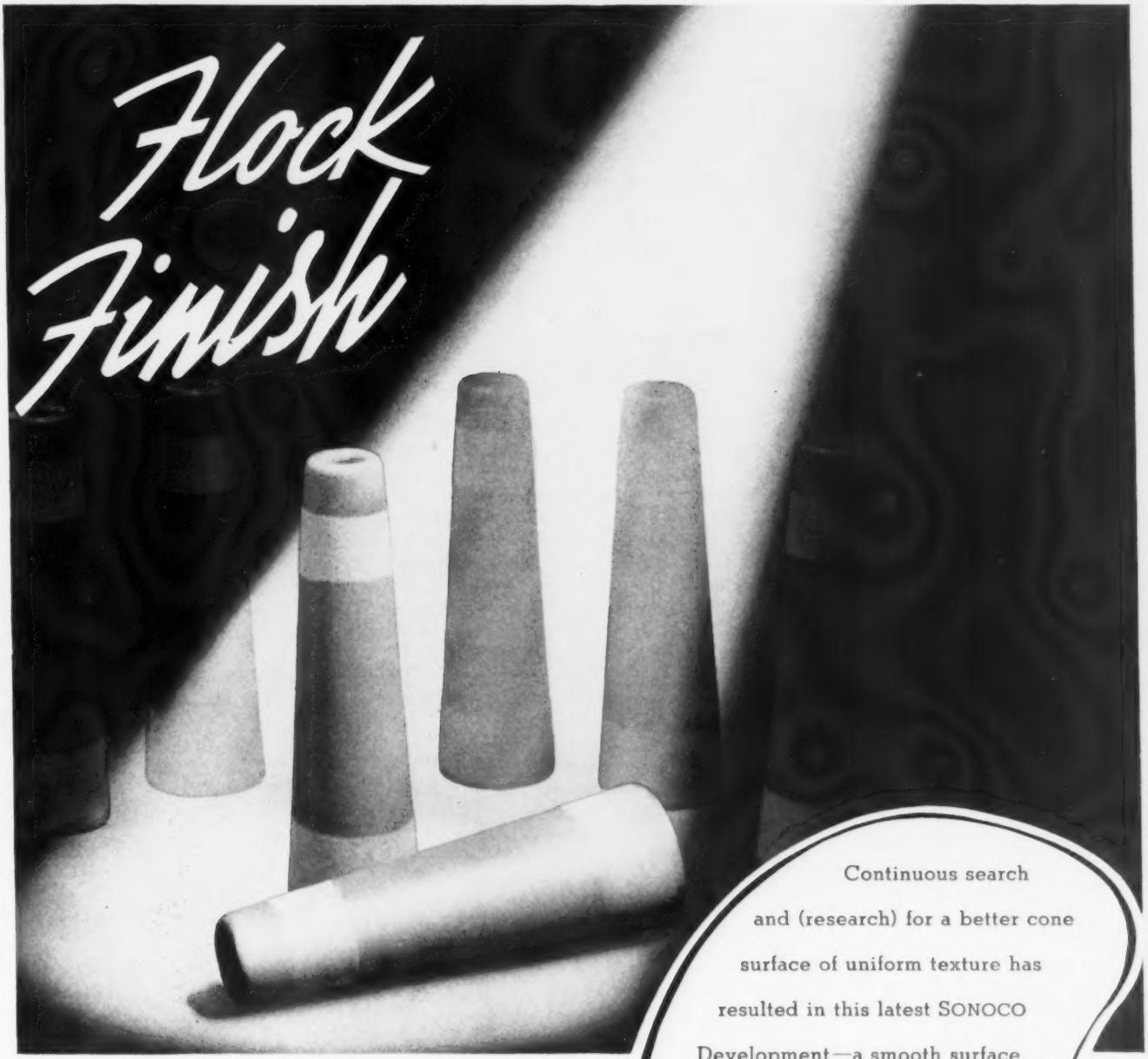
***Desired tension** in fabric being wound is set on a graduated dial and is held by the batcher drive mechanism.*

Constant tension in winding fabric on rolls is maintained by a cloth batcher recently developed by Greystone Machine Co., Georgiaville, R. I. Desired tension is set on a graduated dial, and is said to be held constant from start to finish of winding by means of a differential drive and hydraulic gear pumps which exert an increasing horsepower as the roll increases in diameter. No attention from the operator is needed except to change rolls. Winding tensionless is also possible.

The drive has been successfully used as a drive unit for individual nips of continuous dye machines and washers. Fabric can be run slack or tight, as desired, in the boxes, without use of dancer or compensating rolls.

The mechanism is totally inclosed,

SONOCO DEVELOPMENT



Continuous search and (research) for a better cone surface of uniform texture has resulted in this latest SONOCO Development—a smooth surface cone (3" 30'), banded with a flock finish at the "critical" points, which prevents slippage in the primary winding as well as free delivery to the last turn.

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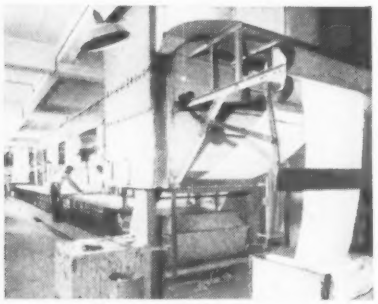
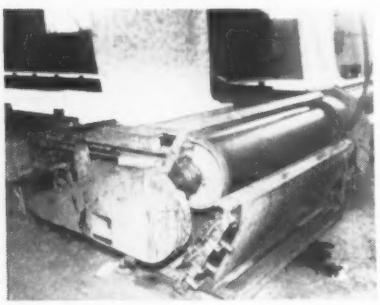
DEPENDABLE SOURCE OF SUPPLY

is self-lubricating, and is equipped with special steel shafts, heat treated and ground to close tolerances, with Timken taper roller bearings and ball bearings. The batcher can be driven from any source of power, either from the machine on which it is being used or by a separate motor, a.c. or d.c. It is manufactured in two models, single center-bar type or double type for continuous operation.

Screen Printer Is Semi-Automatic



***Cloth is removed** from the back-gray blanket at the discharge end of this 20-yd. model and enters a dryer.*



***A blanket washer** beneath the dryer cleans adhesive from the blanket.*

(McGraw-Hill World News) A semi-automatic textile-printing table which preserves the natural charm of hand-printed textiles while cutting out hand labor on unproductive operations has been developed in Australia by Walter Geiringer, 14 McDonald St., Potts Point, Sydney, Australia.

Printing is carried out conventionally with squeegees in pegged stencil frames, but the cloth is spread automatically on the table, is stripped mechanically, and is dried outside the table area in a compact drying chamber.

The table is covered with a belt-like endless blanket which travels over the top and returns on the underside. Preparatory to printing, the reverse of the blank cloth is made adhesive and pressed into intimate contact with the endless blanket. The gumming takes place between rollers which, with guiders and press rollers, form part of the feeding system at the receiving end of the printing table.

As the blanket travels toward the discharge end, the material is drawn over the length of the table, adhering closely to the blanket. Tables of 20-yd. and 40-yd. length are in use. The movement of the blanket is arrested when the cloth reaches the discharge end. One table length of cloth is now ready for printing. Adhesion to the thick blanket prevents distorting, wrinkling, lifting, or shifting during the printing operation or between printing runs. The cloth is kept straight warpwise.

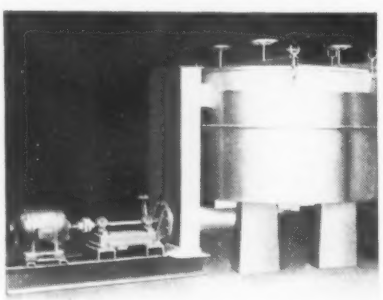
After one or more color applications, the endless blanket is again set in motion. While another table length of material is drawn over the table, the printed portion is stripped from the blanket and drawn into a drying chamber. The drying takes place while the next portion is being printed. Stripping of the table and simultaneous spreading of the next table length of cloth requires only about 1 min.

As the stripped blanket portion rounds the discharge end and travels back underneath the table, it passes a spray bath and is scrubbed and dried. This removes the gum adhering to the blanket after stripping.

The capacity of the drying chamber is 80 yd., equivalent to two table lengths. The chamber is so designed that any required temperature can be maintained with greatest heat economy. Warm air passes the material crossways and recirculates in such a way that even with open doors the chamber is self-sealing.

Average production for one-color prints is 140 yd. per hour. With two and three colors, output comes to 110 and 90 yd. respectively.

Wool Raw-Stock Dyeing Machine Announced



***Economy and ease of operation** are outstanding features of this new wool raw-stock dyeing machine.*

A new wool raw-stock dyeing machine, Model NUAPR, specially designed to prevent felting, channeling, or disturbance of the fiber has been announced by Standard Fabricators, Inc., 355 Walton Ave., New York 51, N. Y. Even dyeing is assured as steam and dyestuff intakes are located in a tank separate from the dye tank so that all additions are mixed before passing through the material. The dyestuff is first distributed by a propeller before reaching the material, giving a steady flow of liquor at low pressure even at the boiling point.

Wool raw stock can be blown into the machine and made to pack itself down by circulating water downwards. Easy unloading is made possible by a removable perforated plate which forms the bottom of the dye tank. The entire batch may be hoisted from the tank and deposited where desired.

The machine in a single unit has a capacity of 250 or 500 lb. Through use of the Steinen system, the 250-lb. units can be coupled to produce larger total batches in capacities up to 1,500 lb., or by closing connecting valves, smaller-size batches up to 1,500 lb.

Other features include a means of sampling without opening the machine, an automatic reversing device, low power consumption and operating cost, a low liquor rate, and all-stainless-steel construction.

Flat-Bed Press Aids Shrinkage Tests

***A flat-bed press** for use in laboratories in conducting shrinkage tests using procedures outlined by the AATCC and Federal specification CCC-T-191a, has been developed by the United States Testing Co., Inc., 1415 Park Ave., Hoboken, N. J.*

The improved flat-bed press can be furnished for operation using 110- or 220-v. current. A thermostat is designed to maintain the uniform temperature required. The size of the press permits the flat pressing of a 20x20-in. square and smaller.

Looms Offered For Export Market

Two models of Hunt certified new single-shuttle looms in three widths are being offered to the export market by Mountain City Foundry & Machine Co., Greenville, S. C. The

Spunjel
FOR WARP SIZING SPUN RAYON

Photo courtesy of:
A. D. JULLIARD & CO., INC.

for solid blending

SPUNJEL maintains the original fiber blend balance in the yarn. Its high adhesiveness and strong, flexible film securely anchors all surface fibers—and effectively reduces shedding on the slashers and looms. It assures a woven fabric that closely approximates the pleasing appearance and hand of expensive worsteds.

SPUNJEL is a specially prepared warp sizing for spun rayon blends containing cotton, wool, acetate and other natural and synthetic fibers. Its high adhesiveness produces results similar to gelatin and makes it particularly suitable for single or plied yarns of acetate or protein fibers.

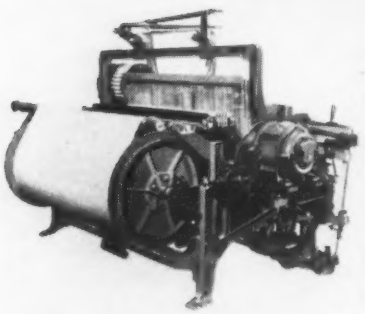
SPUNJEL—which is readily desized by all standard procedures—permits the woven fabric to fluff out better because it has been woven tightly without loss of bulk through shedding.

National also produces: **NALEX** for cotton and worsted warp sizing; **AMBERTEX** a heavy-bodied thickener for white discharge, direct and vat color printing; **FIBERTEX** for textile finishing; **FLOTEX** to replace natural gums for printing; **FLOJEL** uniform, thin boiling corn starches in all standard fluidities; **HOOSIER** Pearl Cornstarch.

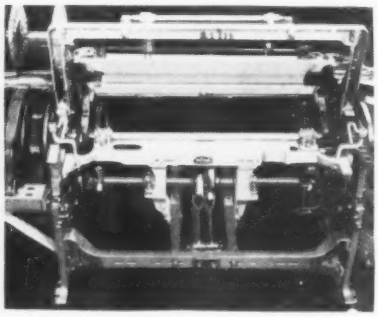
Offices: 270 Madison Avenue, New York 16; Boston, Philadelphia, Atlanta, New Orleans, Indianapolis, Chicago, San Francisco and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto and Montreal. In Holland: Nationale Zetmeelindustrie, N. V., Veendam.

National
STARCH PRODUCTS

STARCHES—AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY



***The Hunt certified new loom** can be furnished with either motor- or belt-driven flywheel drive.*

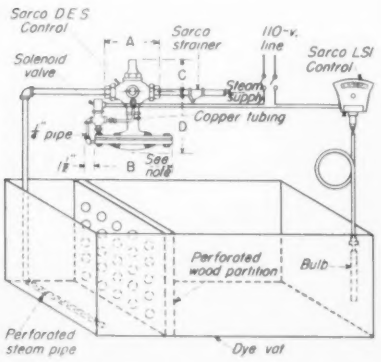


***Standard equipment** is the Hunt spreader which adds two crankshaft and camshaft bearings, a channel brace joining the loomsides, vertical stands connecting camshaft and crankshaft, and stop-motion supports.*

HL-16 model accommodates up to 16 harnesses, and model HL-30 accommodates up to 30 harnesses. Both models are available in three widths, 36, 40, and 44-in. All looms are equipped with the Hunt spreader. Either belt-driven-flywheel or electric-motor drive is available at buyer's option. All looms have a worm take-up, Roper-type let-off, filling feeler, electric warp stop motion, vibrating whip roll, and cut-tooth gears. Filling packages of 7⅞-, 8-, or 8¼-in. sizes can be used; and warp beams from 18- to 26-in. diameter can be accommodated. Auxiliary equipment as cams, dobby, heddles, drop wires, jack sticks, jack and harness straps, etc. are furnished at additional cost. The loom is also furnished, at extra cost, with modifications making it suitable for weaving rayon. Prices range from about $876 to $960 plus export packing charges of about $72.50. Present availability is about four months.

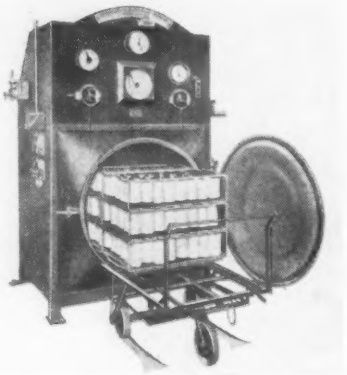
Thermostat-Regulator Designed for Dyeing

A thermostat and control especially designed for use in dyeing processes because of its quick response to slight temperature rises to control steam flow has been developed by Sarco Co., 350 Fifth Ave., New York 1, N. Y. Temperature settings are easily and quickly changeable, and the controlled temperature is visibly indicated at all times. The regulator combines a Sarco diaphragm valve, a solenoid pilot, and an electric thermostat. A fume- and moisture-proof solenoid can be supplied where necessary.



***This sensitive regulator** responds quickly to slight temperature changes and positively controls steam*

Vacuum Aids Yarn Conditioning



***Rapid steam penetration** into packages is said to be aided by a vacuum in the conditioning chamber.*

A new yarn conditioner which is said to provide rapid and even penetration of steam through yarn packages by injecting the steam into a chamber from which air has been removed has been developed by Sanderson & Co. (Textile Engineers) Ltd., 16 Cumberland St., Manchester 3, England.

The yarn container is mounted on a welded-steel frame which also carries a control panel, and a vacuum pump, and motor. Operation after loading is fully automatic. The machine is fitted with three controls, vacuum, humidity, and time.

It is claimed that this system of vacuum steaming gives positive and rapid penetration at any desired temperature. Owing to the shortness of the steaming time and the rapidity of penetration, the outer coils of yarn are not over-steamed before the inner coils have been treated. The absence of air during steaming prevents any size-film oxidation. It is reported by users of this machine that experience has shown that yarn steamed by this method has an even elongation throughout the whole package and also that level-dyeing properties superior to those by atmospheric methods of steaming are obtained.

Plastic Cot Material Eliminates Lap-Ups

***Suitable for use on any type roll,** a new plastic roll covering is said to increase production by reducing stoppages.*

Compar, a new plastic cot for all types of drafting rolls, is six times more abrasion-resistant than rubber, according to Hickory Specialty Co., Hickory, N. C., agents. A non-conductor of electricity, the new material is claimed to eliminate lap-ups. A trial run on combers has been going on for 18 months, and the agent reports that no replacement or buffing of rolls has been necessary.

In another test, a drawing frame with conventional cots was started simultaneously with a frame equipped with Compar-covered rolls, both running identical material. The Compar-equipped frame is said to deliver an average of one more hank per shift as a result of fewer lap-ups and machine stops.

Varnishing of Compar-covered rolls on drawing frames and combers is said to be unnecessary.

Laminated Plastic Aids Hosiery Processing

A hosiery-inspection-table top and a hosiery tray from laminated plastic material which have an extremely smooth surface and long life and which are said to provide economies in handling hosiery and to speed production have been developed by Formica Insulation Co., Cincinnati, Ohio.

Inspection tables can be provided with laminated Formica tops in several colors—green, tan, or lighter pastel shades, designed to reduce eye fatigue of the operator. Hosiery is laid flat on the table and defects are readily revealed, the manufacturer states.

All Formica parts for use in the textile industry have smooth, highly

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- *Prestomark Labels*
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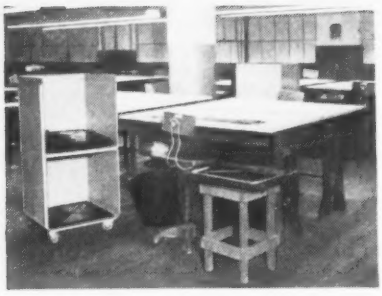


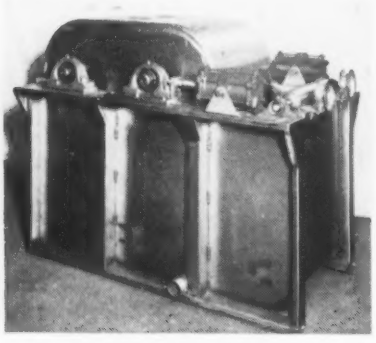
***Stockings** are transported on Formica trays on the truck (left) to the laminated-plastic-topped inspection table (right).*

polished working surfaces and edges reducing losses in handling through the several operations of manufacture and the inspection table top.

Table tops are supplied with plain surface or can have an inlaid scale or inlaid vertical measuring lines for sizing the hosiery for length.

Inspection table tops and hosiery trays and carriers are made on several stock sizes, and can be made to meet the size requirements of any mill on special order.

New Saturator Made Of Stainless Steel



***A watertight stainless-steel cover** may swing clear of squeeze rolls or be removed.*

A new self-contained stainless-steel saturator of rigid construction has been developed by Cook-P & N Machine Co., 365 Dorchester St., Boston 27, Mass. Edges of the tank are flanged and hemmed to prevent dirt from falling into the liquor. A top cover, designed to be watertight, may be swung clear of the squeeze rolls or removed entirely.

The squeeze rolls revolve in self-aligning ball-bearings supported by stainless-steel box channels which are an integral part of the machine itself. Squeeze rolls may be rubber covered or stainless-steel covered, or a combination of a stainless-steel roll and a rubber-covered roll may be used. Pressure is applied through pneumatic cylinders supported in stainless-steel pivot brackets attached to the top of the machine.

An air-control panel is standard equipment. All pot eyes used are of stainless steel, and the pot eyes at the entering end are adjustable to change the position of the cloth in relation to the squeeze rolls.

The tanks, cloth inlet and outlet may be modified to suit local requirements.

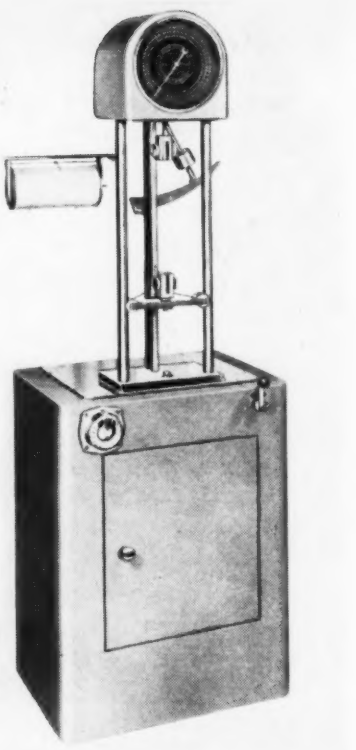
Moisture Measurer Handles Textile Materials

***A new Moisture Teller** designed especially for textile use has been developed by Harry W. Dietert Co., 9330 Roselawn Ave., Detroit 4, Mich. The No. 278T-12 moisture-measuring instrument is equipped with an 8-in. diameter by 12-in.-deep sample pan which will accommodate large samples of fibers, fabric, or similar material. The special construction of the pan prevents excessive heat loss and measures uniform temperatures throughout the sample.*

Samples of wool fiber of 300 grams weight are dried in 15 min. without damage, the manufacturer states. The temperature is controlled by means of a thermostat in the range of 125 to 300° F.

Tester Covers Several Ranges

Primarily designed for use in the textile industry, a new multi-low-range pendulum tester was recently announced by W. C. Dillon & Co., Inc., 5410 W. Harrison St., Chicago 44, Ill. The dial has four scales, 0 to 10 lb. graduated in 1-oz. divisions, 0 to 25 lb. in 2-oz. increments, 0 to 50 lb. in 4-oz. increments, and 0 to 100 lb. in 8-oz. increments. The pendulum arm is color coded for varied placement of a known weight depending on the strength of material under test. Each of the four dial scales has a corresponding color. An accuracy of one-half of 1% is guaranteed by the manufacturer.



***Speed of the tester is** manually controlled from the dial mounted on the front of the machine.*

Speed of the driving motor is controlled by a dial on the front of the tester. Stepless speed control from 0 to 20 in. per min. drawbar travel is said to be possible.

Standard equipment on the tester is an elongation-recording mechanism.

Three steel pressure columns are said to lend rigidity to the tester. Limit switches prevent overruns at top or bottom. All wiring and the drive motor are enclosed.

Stainless Tight-Rope Washer Ruggedly Built

A new stainless-steel tight rope washer, a self-contained unit designed to handle all weights and types of fabrics at present-day speeds has been announced by Cook-P & N Machine Co., 365 Dorchester Ave., Boston 27, Mass.

All rolls are stainless-steel or rubber

TEXTILE EQUIPMENT NEWS
(*Continued on page 200*)

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These Wonder Working Machines Will Do Everything, Everywhere For All Types of Floors, Faster at Lower Costs.

Precision-Built *Generals* will save and protect your new floors, rejuvenate your old floors, enhance the appearance of your building interiors. They eliminate the necessity for all old fashioned hand labor by performing any of your floor maintenance operations better and at a fraction of your present costs.

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GENERAL Floor Machines are available in two series. The "K" models are powered by heavy duty repulsion-induction type motors . . . Designed for the long hour duty heavy type of floor maintenance. They are especially recommended for factory and institution use, or in large installations where traffic is heavy and floor maintenance is a major problem. They are unusually quiet under operation . . . Available in 14", 16" and 18" brush sizes.

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Pointers FOR SUPERVISORS

How the Management Team Can Build Better Human Relations

By GLENN GARDINER

"IF YOU HAD YOUR CHOICE between an overseer who was a master of the technical and mechanical side of his job, and an overseer with proven ability to build and maintain highly cooperative relations with people, which would you select?"

That's a question put to me the other day by a mill manager.

Of course, my reply was that no supervisor today can get the best results unless he has both technical ability and the ability to get along well with people. When any man rises to a supervisory position, his success depends upon getting results through people. All the technical knowledge is of little avail if a supervisor doesn't know how to build up an efficient and cooperative work force.

There are a number of hard economic reasons why good human relations in our textile industry are of paramount importance today. Let's consider several of them.

In the first place, there has been much equalizing of wage rates in the last few years. Many developments have worked to bring about uniformity of rates of pay throughout the industry. Wage differentials have been greatly reduced. This means that competing mills pay approximately the same price per hour for given classifications of labor.

The effect of this leveling of wage rates has been to give new emphasis to the importance of getting the most in return for an hour's pay. Wage rates are out of competition for all practical purposes. The new basis of competition is the ability of a company's management organization to utilize each man-hour most effectively. Thus, ability to supervise workers so that maximum production per man-hour is achieved becomes a powerful factor in determining a company's competitive strength.

Here's another related reason that makes human relations highly important today. The price of labor has soared to high levels. The only offset is to get more for an hour's pay. This calls for more expert attention to worker relations. It requires supervisors who can develop worker cooperation. We need supervisors today who can sell workers on the need for increased productivity as a factor in the worker's own job security. It is essential to have supervisors with the practical ability to devise better job methods and then win the cooperation of workers in making the improved methods succeed. Inept supervision can easily result in opposition and resistance from workers which will defeat essential efforts to increase productivity and reduce unit labor costs.

Another point to consider is this: conditions during the past decade have not had a healthy effect upon employee attitudes toward work. The war period, the job market, certain governmental policies, and the propagation of ideas and philosophies destructive of cooperative worker attitudes, have combined to make handling of employees more difficult. Factors promoting job dissatisfaction have been multiplied. It all comes down to this—more ability in supervising people is required today to get the same interested effort from workers that we got a few years ago.

As we look to the future in the textile industry, every sign-post indicates that the need for intelligent handling of human factors in supervision will become even more acute as time goes on. The more competitive the situation becomes, the more critical will be the need for every mill management to pay intelligent attention to building and maintaining better human relations.

This is no one-man job. Everyone on the management team from top executive down to the lowest-rank supervisor must play his part. As on any other team, a fumble by anyone with supervisory responsibility affects the fortunes of the entire team.

A New TEXTILE WORLD Department

With this issue we begin to meet a fundamental need in the industry by publishing a new department entitled, "Pointers for Supervisors." The basic purpose of this department is to present the "how" of building better relations with workers. Every reader with any supervisory responsibility whatever will, we believe, welcome it and find it of value.

The new department is written by Glenn Gardiner, a well-known textile-mill executive who understands the problems of our industry and who is also unquestionably the widest-read author in America on industrial-supervision subjects. He writes out of a long industrial background and from the same kind of experiences that you and other members of your management team face daily in your work.

Mr. Gardiner is vice president of Forstmann Woolen Co., Passaic, N. J., and president of the New Jersey State Chamber of Commerce. He is the author of more than thirty books on industrial management, supervision, and labor relations. For more than 25 yr. he has filled his spare time in sharing, through his writings, his practical ideas on better supervision. He feels that this is his most effective means of contributing to the improvement and preservation of American industry, which he earnestly believes has provided more for people than the industry of any other country in the world.

GLENN GARDINER

In this new TEXTILE WORLD department, whether you are the supervisor with the highest executive position in your mill or the foreman with the smallest work group, you will find practical, useful suggestions that you can put to work. It is with both pride and anticipation of your approval that we offer you this new service.—*Editor.*

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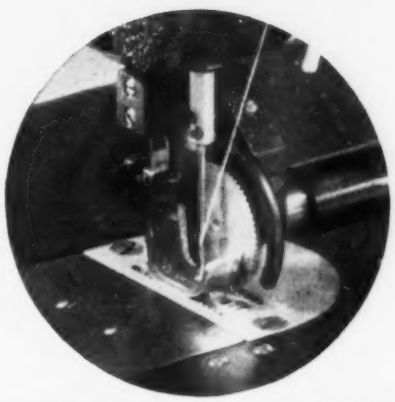
IT'S new! It's better! It's faster! It's the new Union Special Top Feed Lockstitch machine. Few new machines have ever offered greater advantages to manufacturers anxious to cut costs and improve product quality at the same time. The Top Feed Lockstitch is another in a series of new developments being made available to the needle trades as rapidly as manufacturing conditions permit. FOR THE BEST IN MODERN SEWING EQUIPMENT, LOOK TO UNION SPECIAL!



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ADJUSTABLE FEED—Top feed can be adjusted to run faster, slower, or at same speed as the regular machine feeding mechanism.

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Round Table

FOR EXCHANGE OF IDEAS—*The Round Table is open to letters from any and all readers discussing subjects relating to mill management, production, engineering, technology, etc. Names of contributors will be held confidential if so requested, but contributions must be signed with real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table,* TEXTILE WORLD, *330 West 42nd St., New York 18, N. Y.*

Let's Take Stock of The Needs of Our Industry

All of us connected with mill operations should sit down for a few minutes and take stock of problems with which we are faced. Our obligations to the industry, to those who work in our mills, and to the communities in which our plants are located are too great for us to sit idly by and do nothing when we can plainly visualize the tough times ahead of us.

We have increased our operations to a round-the-clock basis as a means of increasing production and reducing cost. Many of us have sold our surplus property and villages to reduce overhead. However, the inside of our plants—the real source of our bread and meat, and, to a large extent, the determining factor of our ability to stand up under competition—has been more or less neglected.

Foreign countries are becoming self-sufficient in spindleage, thereby reducing our export markets; and some are offering textile goods to us at prices we cannot meet. A large number of these foreign spindles are second hand—spindles we considered obsolete—our junk!

HANDLING. One of our biggest items of cost is that of handling material in process. The cotton and rayon that we spin is unloaded from box cars, conveyed to the warehouse, brought to the opening room, mixed, and fed into the primary feeders—all by hand. The laps produced at the pickers are doffed, weighed, and carried to the cards by hand. The sliver produced at the cards is doffed and moved in behind the drawing frames by hand. The drawing sliver is doffed by hand and moved in behind the slubbers in the same manner. The roving is doffed and handled by hand several times before the bobbins are returned. The warp and filling yarns from the spinning frames are doffed and manually handled many times before they reach their respective destinations. The warper and slasher beams are likewise subjected to multiple handling. The cloth from the looms is also handled over and over again.

An analysis of the flow of stock and supplies in process will reveal that approximately 47% of our direct labor cost can be conservatively classified as handling cost. In the average mill, approximately 33% of this handling cost occurs between departments. In some mills where production does not flow in straight lines, the cost of handling is much higher. We will agree that the solution of this problem lies in better layouts of equipment to permit an uninterrupted flow of material, both within and between departments, and in the use of mechanical handling equipment.

However, there are instances where mechanical handling equipment has been installed in mills to correct a bad situation and it was found later that better results could have been obtained through a reshuffle of a couple of small departments. There are also cases where the cost of a mechanical handling system could have been considerably reduced by minor changes in layout. Why not arrive at the best possible layout first and then fit the handling system to it? These mechanical systems can be money savers if they are properly engineered. However, they are neither medicines for the ailing nor cure-alls for a poor sequence of operations.

WASTE. And what about waste? Most of us are inclined to think of waste in terms of the droppings produced at the opening and picking equipment and the motes, fly, and strips made at

TEXTILE TICKLES . . . . . *By Edgar Allen, Jr.*

"If you're such a GOOD production manager, then why can't you change the 51-gage machines to 66 gage for one teenie-weenie pair?"

Duesberg-Bosson of America, Inc.

—manufacturers of the new

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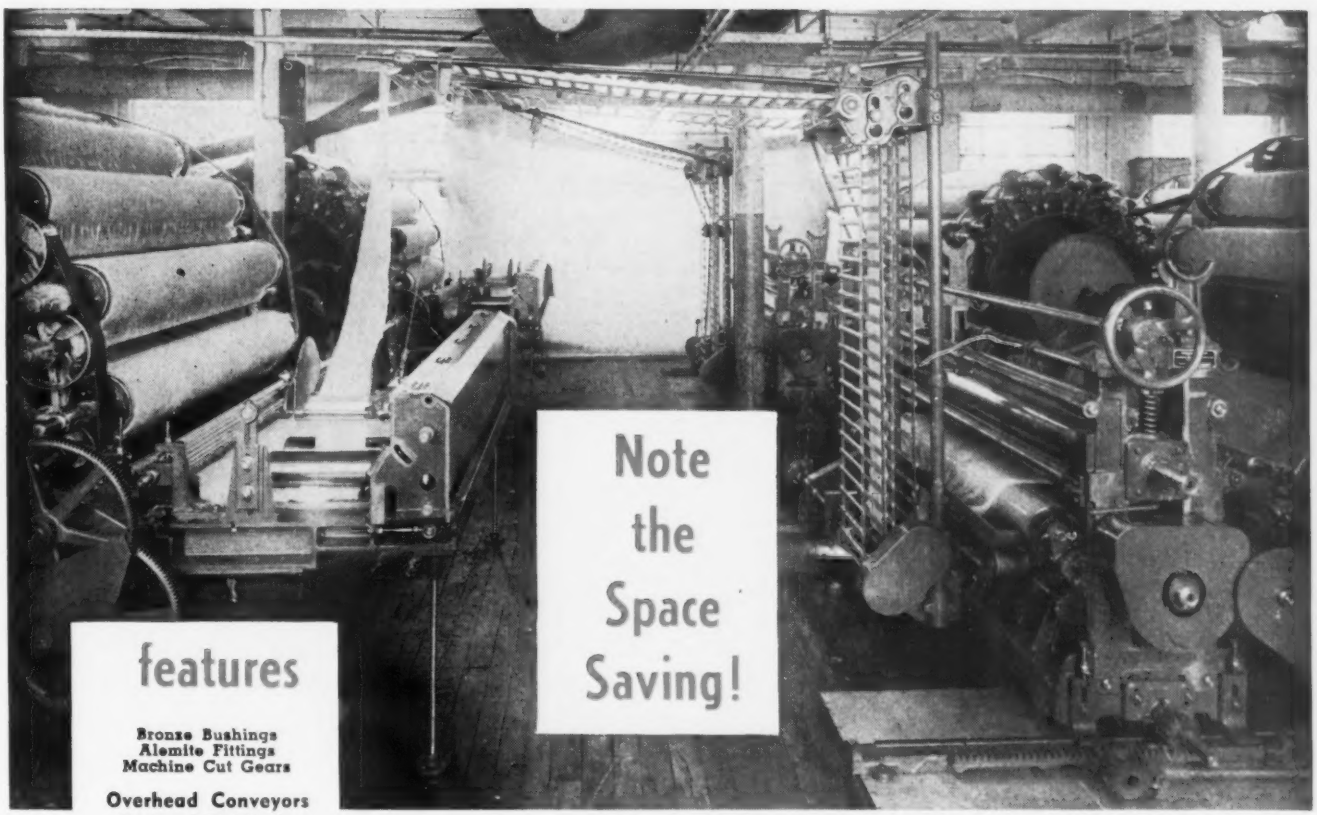
TO FIT THEIR PATENTED PERALTA MACHINES AND EXISTING CARDS



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cards. We can tell, if asked, how much waste is produced at our pickers and cards. We can also tell with reasonable accuracy the percentages of picker droppings, motes, fly, and strips that make up this average. Not many of us, however, keep adequate waste records. Most of us, therefore, are unaware of the waste variation that occurs between individual machines. We are inclined to say, "These waste records will cost money," without open-mindedly considering the saving that such records can point out to us.

As a whole, our waste problem is not limited to the waste normally made at machines. We have other items of waste, equally important, to which we pay little attention. We have waste of material due to improper scheduling and routing. We have material waste and machine down-time caused by inadequate repair and maintenance schedules. We have a waste of manhours because we continue to go by the rule of thumb in prorating manpower. We have waste and spoilage because of poor housekeeping. We rework a lot of stock because we do not explain the need for care to our machine tenders. We replace some of our machine parts with new ones, making no attempt to repair simple breaks. Our junk piles contain shafting, pulleys, gears, and other items with value much larger than the few dollars that we get from them as scrap.

What are we doing about waste? Are we going to continue in the same old rut and take them for granted? Let's take a look around us, especially in the direction of our big mill groups. They are doing something about it. What kind of a wallop are they going to hand out when the competition really sets in?

RESEARCH. Our industry has contributed generously to pure research during the past four or five years. We now have several organized groups of researchers who are investigating the raw materials we use and trying to find new uses for the goods we make. Pure research is not only costly, but it also can be discouraging to those who devote themselves to it. It is new to our industry, although we have long needed it, and we cannot expect a rabbit-out-of-the-hat soon. From an historical point of view, the industrial values of the products obtained through pure research have been many times greater than the cost. However, it is doubtful that the findings of our research groups will be a shot-in-the-arm to the insides of our mills—our old methods, mechanical principles.

Over the last 50 years, we have had but few outstanding developments in processing machinery. Opening equipment has changed only slightly. Pickers cards, and drawing are the same as they were before 1900. We have added long draft to roving and spinning; however, the basic principles of these frames remain unchanged. The major contribution to the industry has been automatic spooling and high-speed warping equipment.

Most of us are not willing to admit that the lack of progress in our industry is of our own making. We have failed to develop technical skill. We have offered low wages—a poor inducement—to men from textile schools. Therefore, a high percentage of them have chosen other fields of endeavor. Even now a lot of us criticize our newcomers because they are demanding a decent income.

In the face of a crisis we say we need higher-speed machinery. We say we need fewer processes. We say we need more compact machines that require less area. We say we need automatic doffing, even though we realize that it will likely require a complete redesign of our spinning frames and spindle assemblies. Where do we expect these things to come from? Do we have an organized, industry-sponsored development group to look into these needs? The answer is No. And we may be sure that wishful thinking is not going to provide these improvements for us. *(R-404) Job J. Mills, Greenville, S. C.*

Worsted-Yarn Strength Aided by Nylon Core

One of the factors that has always limited the use of worsted yarns for extremely fine goods is their lack of strength, which, of course, also limits wearability. The prospect of correcting this fault by the use of continuous-filament nylon yarn in conjunction with worsted yarn is receiving quite a bit of attention in England.

Two methods of utilizing nylon yarn are being explored: (1) plying an end of nylon with an end of worsted yarn, and (2) spinning the nylon as a core for the worsted yarn.

The first method, of course, has the disadvantage of showing the nylon, particularly after the fabric has been dyed. The use of the end of nylon does increase strength.

The second method seems to have greater promise. Besides almost completely hooding the nylon, this core method also offers some advantage in spinning. Counts considerably finer than those normally spun from a given quality of top have been woven successfully. For example, counts as fine as 70s, essentially an all-wool yarn, have been woven on automatic looms.

It has been shown that the use of a 20-den. nylon-filament core in 17s worsted yarn doubles the strength of the yarn. Usually, this type of yarn is employed only for the warp. The filling is all-worsted yarn. Thus, the amount of nylon in these fabrics ranges from 3 to 12%.

Examples of the possibilities of nylon-worsted yarn are: 1. A worsted flannel woven of 18s worsted warp cored with 20-den. nylon and all-worsted filling. The nylon content is about 3%. 2. A fine-handling crepe woven of warp and filling of 36s worsted yarn with a core of 30-den. nylon. The nylon content is about 12%. *(R-402)*

Soviets Veto Cotton Names

Further use of the names American and Egyptian as descriptive of Soviet-derived cotton varieties is termed "unbecoming to our advanced science" by the Russian cotton expert, F. Mauer, in an open letter published by *Sotsialistcheskoe Zemledelie*.

The letter, which represents a new aspect in the current Soviet campaign against fawning before things foreign, is translated here:

"Soviet cotton growers, who produce the best-quality cotton in the world, cultivate exclusively native-selected varieties. These varieties are related to two botanical sorts discovered and first named by Linnaeus: (1) *gossipium hirsutum*, and (2) *gossipium barbadense*. [The former essentially American Upland, the latter Egyptian.]

"So long as the American Upland and Egyptian cotton types were sown here without any kind of variation, the names American and Egyptian were essentially correct. But now these names are antedated. During Soviet power, the creative work of Soviet selectors developed our own remarkable types of the *hirsutum* and *barbadense* sorts. These varieties have nothing in common with the American Upland and Egyptian types. They markedly differ from them in economic indications and morphological and physiological peculiarities, and in a botanical sense they are completely new types of these sorts.

"The Soviet varieties are immeasurably better than the American in combination of high productivity with high-quality output. Moreover, they are well adapted to the climatic and other conditions of our cotton regions and are distinguished from foreign types by remarkably early maturity.

"Consequently, the names American and Egyptian, with respect to Soviet cottons, are outdated. Further use of these names is unbecoming to our advanced science, to our foremost Soviet cotton growing." *(R-405) McGraw-Hill World News, Moscow.*

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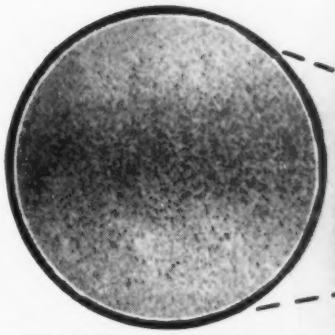
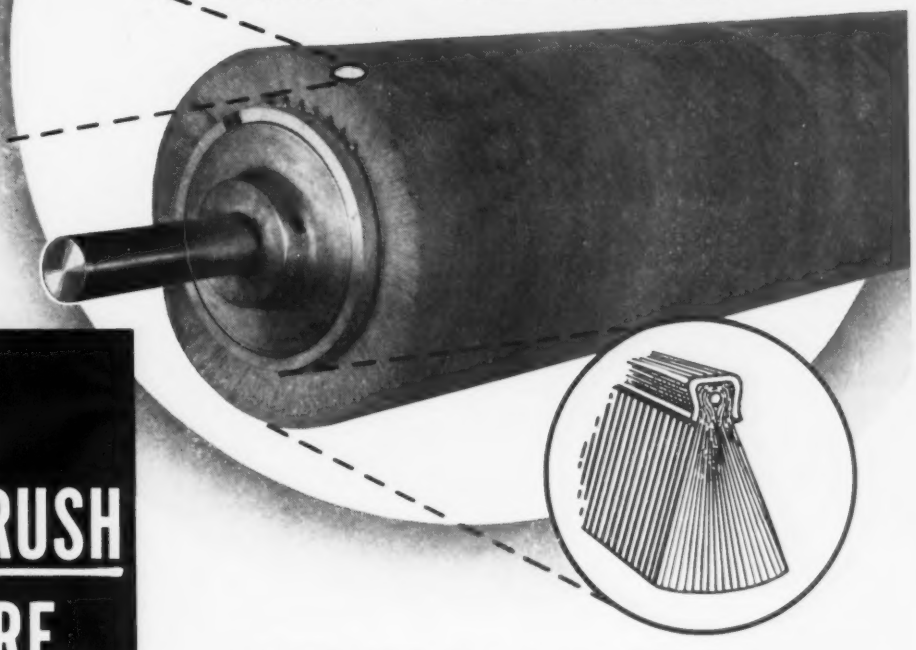


ENLARGED VIEW OF BRUSH FACE TO SHOW TRIPLE DENSITY



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GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

TRAVERSE ADJUSTMENT
No. 250 Sizing Machine

The several adjustments which are necessary in order to get the correct positioning of yarn on the sizing tube should never need changing if they are properly made in the first place. But occasionally a machine has to be moved or it becomes necessary to dispose the yarn differently on the tube, requiring readjustments.

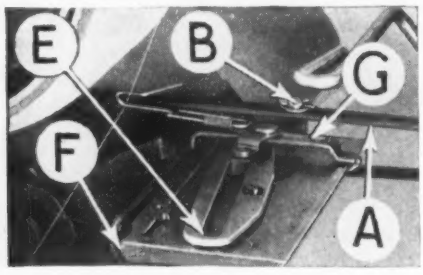

Fig. 1. Traversing mechanism with cover removed. (Yarn has been passed through the thread guide to show the incorrect method, which makes two sharp bends.)

Taper bar links. On machines operated from the same builder cam mechanism, the taper bar links (A in Fig. 1) must be adjusted so that all spindles have the same traverse length.

1. Remove the spring at the left-hand end of the row.

2. Measure carefully the distance between centers of the nearest spindles on two adjacent machines.

The distance between the taper bar pins (B) should be equal to this distance. If not —

3. Loosen bolt (C in Fig. 2) joining the taper bar links for the two machines; adjust as necessary.

4. Replace the spring at left end.

Follow same procedure for other machines in the row if more than two have taper bar links coupled.

Traverse. It is sometimes necessary to re-center the traverse on the sizing tube if the distance from selvedge to edge of tube is not equal front and back.

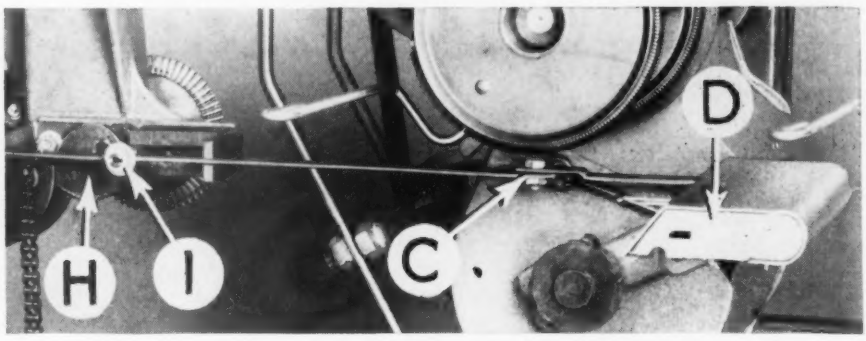

Fig. 2. Builder cam mechanism with cover removed to show heart-shaped traversing cam.

1. Remove the guard (D).

2. Stop the builder mechanism with taper bar slot (E in Fig. 1) parallel to the traverse bar.

3. Insert a screwdriver at F and loosen the screw on the end of the traverse bar enough to remove the front end of the thread guide bell crank carrier (G) from the slot in the traverse bar.

4. With the toe of the carrier remaining in the slot (to keep the traverse bar from turning) tighten the screw.

Now the traverse bar can be moved in or out by means of the screw. Since the traverse bar has 32 threads per inch, one complete turn changes the thread guide location a distance of $\frac{1}{16}$ in. (rather than $\frac{1}{32}$ in., because what is added at one end is removed from the other).

The length of the traverse depends on the position of the taper bar links relative to the cam (H in Fig. 2). So —

5. Stop the builder mechanism at the point of maximum traverse — which means with the roll at the low point of the cam.

6. Run yarn on an adjacent spindle and measure the traverse.

The normal traverse is 6 in., but some mills prefer a longer traverse so as to reduce the thickness of yarn on the tube; others prefer it shorter to make absolutely sure the selvedges are well protected.

7. To change traverse length, loosen the nut (I) on the builder cam follower roll stud.

8. Move the taper bar link (A) — by hand — to the left so that the roll is clear of the cam. (Otherwise, the tension in the spring might cause the cam roll to shift an uncontrolled amount.)

9. Tap the stud lightly along the bar — to the left to lengthen the traverse, to the right to shorten it. The ratio is roughly 2 to 1 — shifting the roll $\frac{1}{16}$ in. changes the traverse length about $\frac{1}{8}$ in.

Now, with the traverse in proper adjustment, full advantage is taken of the unique yarn distribution method provided by the machine.

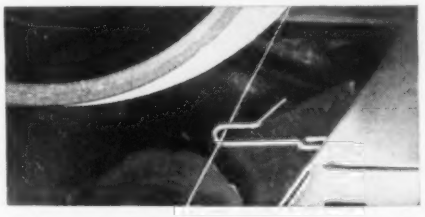

Fig. 3. Yarn passing correctly through guide for straight thread line.

May, 1948

23-7-6

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Kinks AND SHORT—CUTS

Loom Knocks Off When Knife Cord Breaks

✻ **PRIZE WINNER FOR MAY**
(March contest)

A simple device for stopping a plush or velvet loom or ringing a warning bell when the knife cord breaks may be constructed as shown in the accompanying sketch.

Parts necessary for construction are a piece of picker stick 12 in. long with a ⅜-in. hole drilled at each end, two ⅜-in. studs 2 in. long, and a grooved ¾x1-in. hardwood pulley to run on the knife cord. A guide wire will help to keep the pulley on the knife cord. Use one stud to fasten the picker stick to the loom leg in such a position that the pulley will run on the cord. The other stud is used to fasten the pulley to the dropper stick.

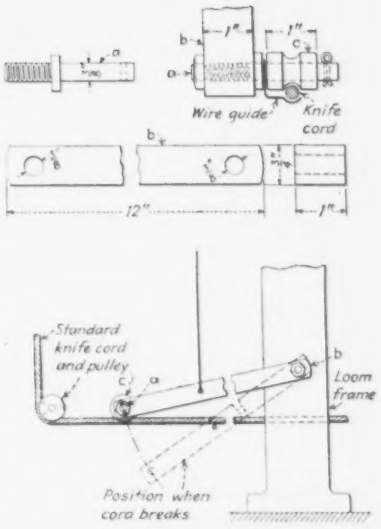
To assemble the device, place the threaded end of one ⅜-in. stud (*a* in sketch) through the hole drilled in one end of the dropper stick (*b* in sketch). Secure the stud to the stick by running a thin nut up on the stud threads. Place the wooden pulley (*c* in the sketch) over the unthreaded end of the stud secured to the drop stick. Fasten the pulley on the stud by inserting a cotter pin through the end of the stud. The guide wire can be looped around the stud, as shown in the sketch, and bent around the pulley and knife cord.

Now place the unthreaded end of the other stud *a* in the other end of dropper stick *b*, and secure it with a cotter pin. Drill a hole through the leg of the loom on the left front side. insert the threaded end of the stud through the hole, and run a nut up on the threads until the stud is held securely to the loom leg.

Position the wooden pulley on top of the loom knife cord, with the groove in the pulley riding the cord. Bend the guide wire into guard position so that the pulley cannot come off the cord. The dropper stick is held loosely by the stud in the loom leg, and only the knife cord supports the pulley. If the cord breaks, the pulley will swing downward in an arc controlled by the pivot point of dropper stick *b*.

Attach a piece of twine to the dropper arm as shown in the sketch. Fasten the other end of the twine to the warp stop motion. When the knife cord breaks, permitting wooden pulley *c* to fall, the twine will be pulled by the weight of the pulley. This pull on the twine will trip the warp stop motion and stop the loom.

If it is desirable to use a signal light or bell instead of a knock-off, an automobile stop-light switch is suitable for the purpose. Hook a wire to the dropper stick and fasten it to the stop-light switch instead of to the warp-stop motion. When the knife cord breaks and wooden pulley falls, the pull on the wire will cause an electrical contact to ring the bell or turn on a red signal light. If the loom is equipped with an electric warp stop motion, ground one wire from the switch and run the other to the warp stop-motion magnet. *(K-816)* A. L. *Kirchhofer, Easton, Pa.*



Plush or velvet looms frequently have knife cords break. This knock-off drop stick, connected with the warp stop motion, will stop the loom immediately when such a break occurs.

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2. New contest every month. Each contest closes with kinks received last day of the month. Prize winner is published the third succeeding month.
3. All kinks will be paid for on acceptance. Illustrations, when submitted, do not need to be finished drawings (penciled sketches are satisfactory); but they should be clear and complete. Prize awarded to winner is sent to him after publication. Good photos are acceptable.
4. Previously published material is not eligible for prize or publication.
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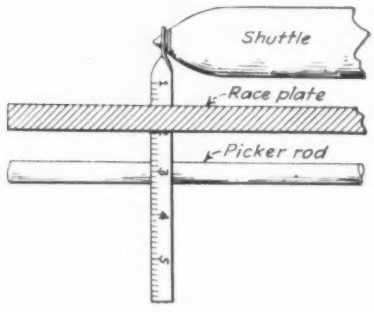
KINKS & SHORT-CUTS

(Continued from page 161)

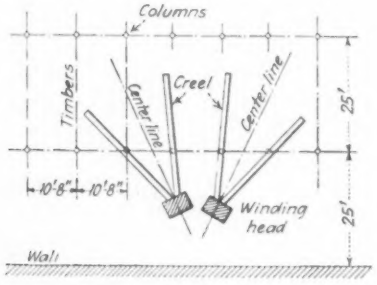
Special Rule Indicates Size of Picker Needed



***A special rule** for accurately measuring the distance between the point of the loom shuttle and the center of the picker rod can be made as shown here. The end of the rule has a ring that slips over the shuttle point. It is graduated so that the center of the ring is the point from which measuring begins.*

As shown in use here, the rule indicates that a 3-in. picker would be needed. (K-853)

Place Warp Beamers For Operator Convenience



***High-speed warpers** placed with the winding heads turned toward each other, as shown here, yield greater production by reducing walking by the operator and down time of the machine. Better inspection also is possible, thus aiding quality.*

In order to make the job of our warper tenders easier, we rearranged our machines as shown in the accompanying sketch.

The usual arrangement, and the one we originally had, places the center line of the machine at right angles with the wall. This arrangement places the winding head parallel with the wall. A warper tender operating two machines has a good bit of floor space to cover when the two machines are set in this manner.

We placed the machines so that the two center lines would intersect at a point between the winding heads and the wall, leaving only enough room between the heads to permit easy doffing of the full beams.

The advantages we have found from our new arrangement are:

1. It cuts down on the amount of walking the tender must do.
2. It reduces "down time" of the machines, thereby increasing production.
3. It facilitates inspection of the running beams by placing both beams nearer the operator, thereby aiding in winding a better-quality beam. *(K-841)*

Fly-Frame Knock-Off Improved With a Spring

The knock-off motion on a fly frame gives much trouble in many card rooms. Usually, the knock-off lever is not held positively enough to prevent the frame from running several revolutions after the knock-off motion has been activated.

We have found that a ¾-in. spring attached as shown in the accompanying illustration is effective in knocking off the frame. Since we installed the springs, our frames do not run more than four revolutions of the bobbins before the frames stop.

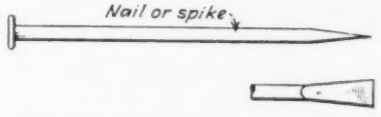
We install the spring in the following manner:

A 7/16-in. hole is drilled in the samson to the right of the knock-off on a right-hand frame at about the point of the samson indicated in the sketch. (On a left-hand frame, the hole would be drilled in the samson to the left of the knock-off.)

An adjusting screw with a hook or pin on one end for connecting the spring is inserted in the 7/16-in. hole. Either a lock washer or two locking nuts should be used on the adjusting end of the bolt. Secure one end of the spring to the bolt and fasten the other end to the bolt through the knock-off lever, as shown.

When the assembly has been made, adjust the tension on the spring by tightening or loosening the nut on the adjusting screw in the 7/16-in. hole. *(K-838)* A. O. Langston, Greenwood, S. C.

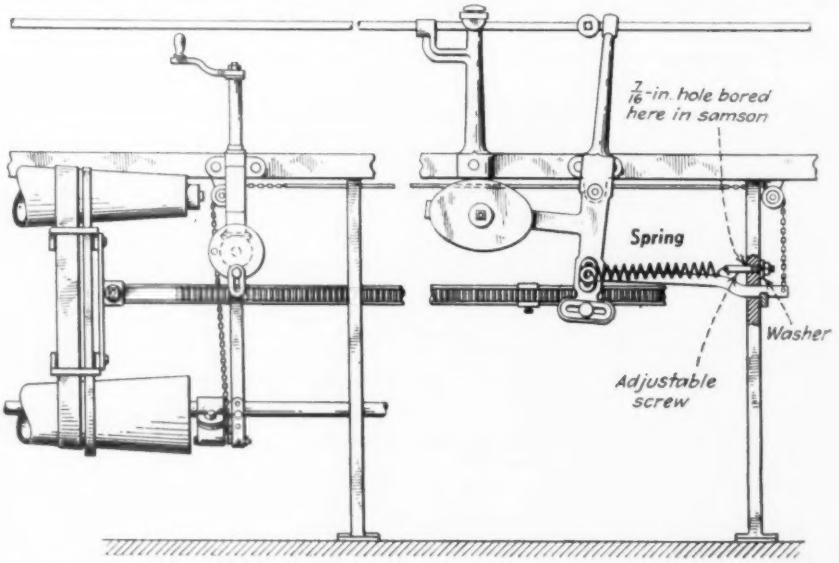
Clean Metal From File With This Spike Cleaner



***Soft metal** imbedded in the grooves of a file can be removed with a cleaner made from a large nail or spike. Leave the end flat, and permit the grooves of the file to shape the points of the cleaner.*

Files that become clogged with cold-rolled steel can be cleaned in the usual manner with card clothing, but the cleaner shown in the accompanying sketch will do a better job. To clean out solder and some of the softer metals, this type of cleaner is far superior to card clothing.

The cleaner can be made from a large nail, but it is better to use a spike in order to have a better gripping surface. To make the cleaner, cut off the point of the spike and flatten the point with a hammer as much as you can without splitting the end of the spike. Then grind the end to a thin edge, as indicated in the sketch. Leave the edge soft. After it has been pushed a few times in the direction of the file slots, the edge will become



***A fly-frame knock-off** that lacks sufficient positive force to knock the frame off at once can be corrected with a ¾-in. spring, as shown here. The only change to the frame itself is a 7/16-in. hole drilled in one samson.*

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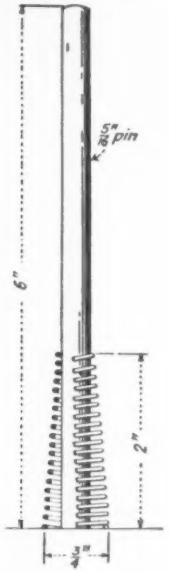
notched to fit the cut of the file and the small points of the notches will clean the slots thoroughly. Clean one side of the file surface diagonally, and then change the file end for end and clean the other side. *(K-847) Walter A. Simond, Franklin, N. H.*

Hold Yarn Tube in Place With Cone of Wound Wire



A cone of wire, 2 in. long with a small diameter just under 5/16 in. placed on the supply-tube of a spooler, will hold the tube of yarn securely. The tube will not jump off the pin when the yarn gets low.

When yarn is spooled from tubes and the tubes are nearly empty, they have a tendency to jump off the pins. Yarn from a tube that has jumped out of place will tangle with yarn from the nearby tubes. Sometimes the displaced tube will fall to the floor. In either case, ends are broken.

To guard against such damage, the spooler is usually slowed down when the supply of yarn on the tubes gets low.

A wire cone placed on each pin and pressed to the bottom of the pin, as indicated in the accompanying sketch, will prevent the tube from jumping off the pin. The spooler can then be run at full speed from the start to the finish of a tube of yarn.

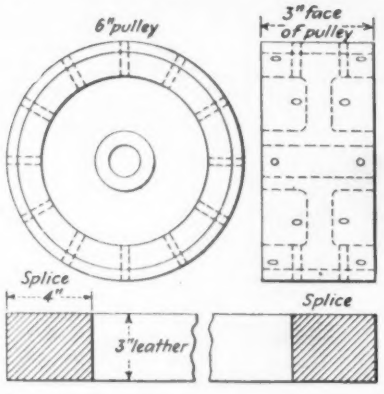
Our spoolers are equipped with $\frac{5}{16}$-in. pins, and we use yarn tubes approximately $\frac{5}{8}$ in. in diameter. We use No. 11 wire to make the tension cone shown in the sketch. (Larger pins would require cones made of smaller wire, since the difference between the diameter of the tube and the diameter of the pin would be less.)

Wind the wire in a conical shape, with the bottom of the cone being $\frac{3}{4}$ in. in diameter and the top slightly less than $\frac{5}{16}$ in. (the diameter of the pin). The cone should be approximately 2 in. in height. Place the big end of the cone down on the pin, force the top of the cone on, and push the cone to the bottom of the pin.

When a tube of yarn is placed on a pin, push the tube down firmly on the pin. The wire cone will be depressed, as a spring, and will hold the tube securely.

We use similar wire cones to hold filling-yarn tubes on the jack winder. *(K-849) E. D. Gorsline, Portland, Ore.*

Leather Cover on Pulley Operated 20 yr. at 1,800 rpm.



Splice, glue, and peg a leather cover on a drive pulley. A pulley lagged by this method operated 20 yr. at 1,800 rpm.

To lag a pulley is a simple matter. To lag one so that it will run smoothly for 20 yr. is quite something else. We lagged a 6-in. pulley on a beater drive that operates at 1,800 rpm. about 20 yr. ago. The leather covers have just been removed.

The procedure we use is as follows:

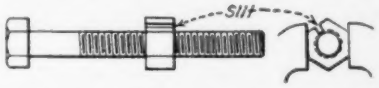
Select a used piece of hard oak-tanned leather, clean it so that it is completely free of oil, and pull the stretch out of it. Wipe the leather with hard waste soaked in gasoline or benzene, and allow it to dry for several days. (A 6-in. pulley will require approximately a 17-in. length of leather. Allow an extra 4 in. in length so that a good splice can be made.)

After the splice has been made, cement the ends of the leather together in order to form a ring. Press the cemented ends for several hours in a vise or in a standard press. The next day, remove the ring of leather from the vise, cover the face of the pulley with glue, and force the leather over the pulley. Three pieces of strap iron placed inside the leather ring and outside the pulley (somewhat as a shoe horn) will aid in forcing the leather on the pulley. If the pulley is very smooth, rough it up with a hasp or coarse file before applying the glue.

Drill several $\frac{1}{4}$-in. holes through the leather cover and the pulley, staggering the holes around and across the face of the pulley. Drive $\frac{1}{4}$-in. wooden pegs into the holes, and dress the pegs off so that they are smooth with the face of the leather cover.

True up the pulley on a lathe. *(K-846) Ernest Bentley, Montreal, Canada*

Slit Nut Guards Against Damage to Bolt Threads



A slit nut run up on a bolt and held in the jaws of a vise will hold the bolt securely without damaging the threads.

Holding threaded bolts, screws, worms, etc. in a vise without damaging the threads is often a difficult task. A method that will avoid damage to the threads is shown in the accompanying sketch.

Secure a nut that will fit over the threads, and cut a slot longitudinally through it as indicated in the sketch. A hacksaw can be used for cutting the slot.

When the nut is ready, run it up on the threads of the bolt that must be held in the vise. Now place the nut and bolt in the vise with the slit in the nut up. The vise jaws engage only the nut. As the vise is tightened, the nut will tighten around the bolt, somewhat closing up the slit. In this manner, the bolt can be held firmly in place without the threads coming into contact with the vise jaws.

This method is also useful on machine equipped with chucks for holding parts. *(K-848) W. E. Warner, Essex, England*

Handle and Store Carboys By Using the Pallet Method

Carboys or other similar odd-shaped packages give trouble in handling and storing. Perhaps the best way to handle and store such containers is by palletizing them. A method for constructing a pallet that can be handled and stacked safely is shown in sketch on next page.

Use a wooden base (preferably plywood) heavy enough to support the weight that will be placed on it. Ordinarily 1-in. plywood will be suffi-

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AlSiMag 192 • A hard, homogeneous guide used by practically every major producer of synthetic yarn. It has enviable performance records in mills throughout the world. Ivory color. A non-conductor of electricity.

AlSiMag 193 • Identical with 192 except that it is metallic gray in color and is a conductor of electricity. Properly grounded, these guides have been of great value in eliminating certain troublesome static.

AlSiMag 491 • This light blue guide has a hardness of 9 on Mohs' scale (next to diamond in hardness). Super hard. Homogeneous. Highly resistant to chipping, cracking. Great mechanical strength. Chemically inert. Its cost is justified where excessive wear is experienced or where mat finish must be maintained under severe conditions.

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MAT FINISH. Not a rough finish but a true mat finish comparable in texture to a smooth egg. Used where minimum drag is required. Minimum drag results because yarn rides high spots in finish, comes in contact with minimum guide area. To maintain mat finish for longest periods unaffected by yarn action we recommend MAT FINISH AlSiMag guides in our hardest material, AlSiMag 491.

SMOOTH FINISH. A medium finish which produces the exact amount of drag desired for certain processing operations. Where you wish to maintain this precise finish over long periods, AlSiMag 491 is recommended although AlSiMag 192 and AlSiMag 193 are satisfactory for most yarns and most processes.

HIGHLY POLISHED FINISH. On this super-smooth finish, which is maintained by yarn action, the yarn comes in contact with more of the guide surface. Thus the guide becomes a tensioning device on a small scale. This often overcomes troublesome snarling conditions.

• • •

American Lava Corporation will be glad to work with you in determining the type of controlled finish most advantageous in your production. If you wish test guides in all three finishes, for trials in your own plant, they will be furnished at reasonable cost.

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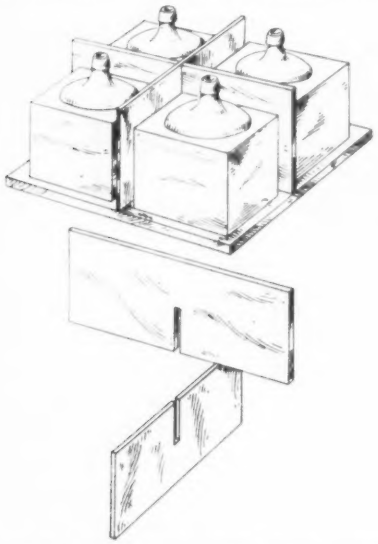
KINKS & SHORT-CUTS

(Continued from page 164)



***Pallet handling** and stacking of carboys can be done by erecting plywood partitions on the pallet, as shown here. The partitions should be 1 or 2 in. higher than the carboys.*

cient; in many instances ½- or ¾-in. will serve. Secure two other pieces of plywood equal in length to the base of the pallet and of a width approximately 2 in. greater than the height of the carboys.

In the center of each of these two pieces, cut a slot halfway through from one side, as shown in the sketch. The slots should be as wide as the pieces of plywood are thick. Place one of these pieces on the base with the slotted side up, so that the base is divided into two equal rectangles. Now place the other piece squarely across the first piece, with the slot down.

The two slots will fit over the unslotted sides of the pieces, holding the pieces steady, with the base divided into four equal squares. Place a carboy in each square section.

If the pallet can be handled and stacked without the carboys being permitted to slide or turn over, no other construction is necessary. Another pallet loaded with carboys can be safely stacked on the first one. However, if the pallet is to be subjected to rough handling, the center partitions should be nailed to the base, or sides should be placed around the carboys. *(K-818)*

Magnets on Trucks Pick Up Broken Needles

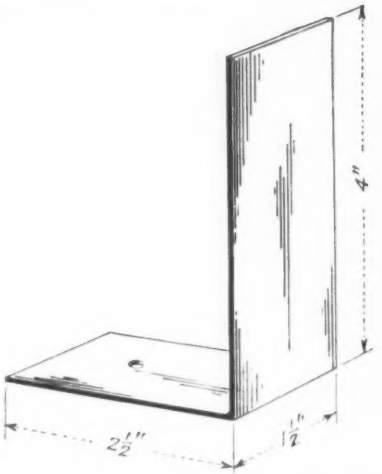
One of the most common injuries that occur in spring-needle knitting mills results from workers stepping on broken needles either imbedded in or lying on the floor. This type of accident occurs particularly in mills that use compressed air for cleaning knitting machines. Broken needles that have been carelessly left on the machines are blown off during the cleaning process. Thus, each traffic aisle has its accident potential.

Regular policing of the traffic aisles will keep the fugitive needles to a minimum. To supplement the regular inspection, an automatic inspection can be made without extra time or expense being involved.

Yarn and cloth trucks are constantly being pushed through traffic aisles. Magnets attached to the bottom of the trucks will automatically pick up broken needles and other scrap metal. The machine shop can make suitable plates, and the power house can energize them.

It is a good practice to remove the metal from the magnets at regular intervals. If the magnets become overloaded, some of the metal will be dropped back to the floor. *(K-845)*

Separators for Winders Increase Efficiency



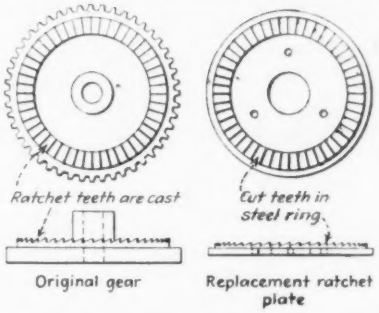
***Separators for winding ends** can be made of aluminum bent in the shape shown here. Fasten the separator about 3 in. from the center of the creel disk. In one mill, these separators increased winding efficiency from 68% to 92% on 75-den. yarn.*

In winding yarn from a cone or cake supply package, trouble is often encountered from broken ends catching on adjacent ends and breaking them also. We had particular trouble with this condition when we started winding 75-den. yarn from cones. Our winding efficiency fell to 68% on this yarn.

After studying the problem, we tried installing homemade separators between the ends. The results were so favorable that we put the separators on all the winders running 75 den. Our winding efficiency rose to 92%.

The separators are made of thin soft metal (aluminum is satisfactory) bent in the shape shown in the accompanying sketch. It is fastened about 3 in. to the right of the center of the disk on which the cone rests during winding. *(K-851)* R. E. Spear, *Montoursville, Pa.*

Steel Ratchet Ring Controls Knitting Back Lash



***Back lash is controlled** on a certain type of spring-needle knitting machine by a cast-iron ratchet and pawl. If the teeth in the ring become worn, cut teeth in a steel ring as explained here. The steel teeth will last much longer than the standard cast-iron teeth.*

On a certain type of spring-needle knitting machine, back lash is controlled by a ratchet-and-pawl arrangement. The ratchet ring is cast into the gear that drives the take-up. Both ratchet ring and pawl are of cast iron. Since the gear is in action at all times when the machine is running, the constant friction between the pawl and ratchet teeth eventually wears the teeth round. When this condition occurs, the snubbing motion is no longer positive and the pawl will slide over the teeth. Smashes and damaged cloth result.

The gear teeth are adequate and wear indefinitely. After the ratchet ring is no longer serviceable, a modification to it can be accomplished which will give much more service than the original ring.

The worn-out ratchet teeth are turned down in the lathe until a flat surface is obtained. A steel ring is cut to a diameter a little larger than the diameter of the ratchet ring. The diameter of the center hole in the ring is just large enough to slip over the gear stud. The blank ring is turned to a thickness equal to the depth of the ratchet teeth plus enough body to give stability to the plate. If a heavy plate is desired, the gear surface may be undercut to form a recess in which to inlay the plate.

After the blank has been turned to the correct thickness, all the surface

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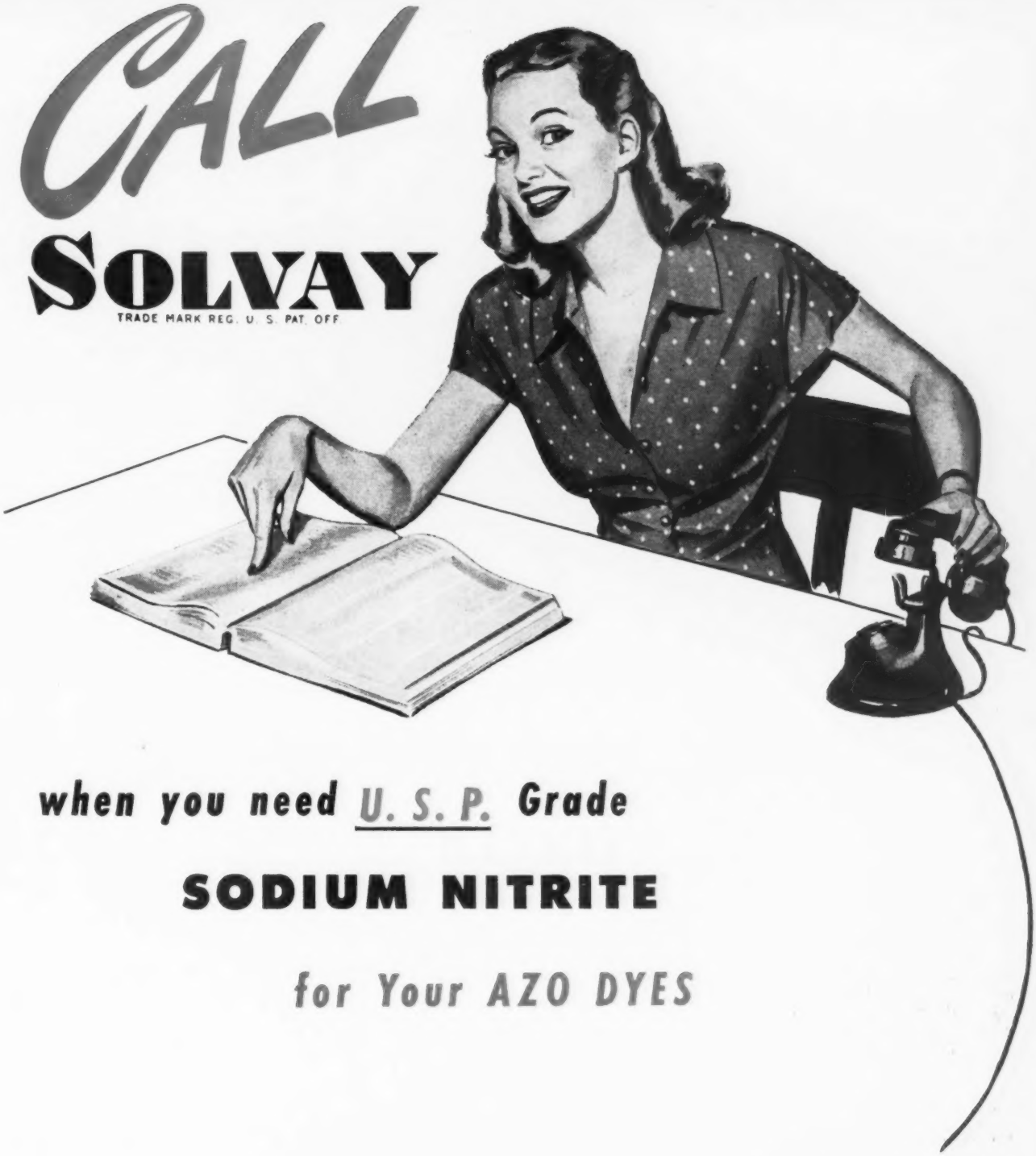

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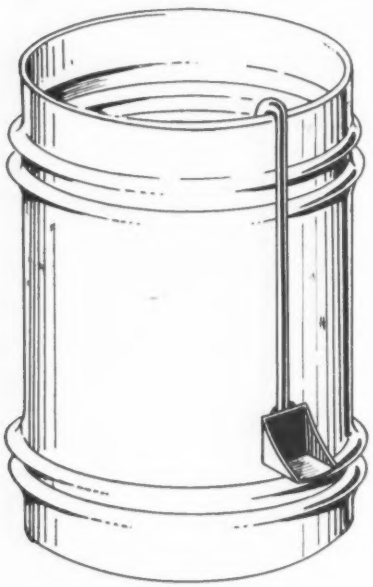
KINKS & SHORT-CUTS
(Continued from page 166)

is turned down the depth of the ratchet teeth except the portion into which the teeth are to be cut. The teeth are then cut into the resulting raised ring. Three countersunk screw holes complete the job. After the first set of plates is made, it is good practice to keep one plate as a master plate. This plate can serve as a template for drilling and tapping the gears and as a model for the machine shop for making future plates. *(K-842) Albert M. Young, Jr., Philadelphia, Pa.*

Sheet-Metal Scoop Removes Grease From Drum



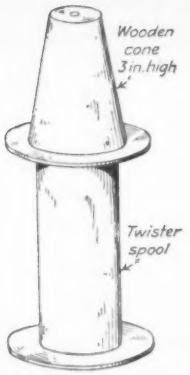
A sheet-metal scoop attached to a handle long enough to permit easy reaching of the bottom of a half-empty grease drum may be a help in eliminating the messy task of filling grease cans. **(K-787)**

Use This Cone Mount In Making Rayon Cakes

It is often difficult to find the starting end of a cake of rayon when the cake is being prepared for winding. If the operator breaks a wrong end, more time is lost.

In order to save the time spent on looking for the proper end and to guard against the operator selecting the wrong end, we rigged up a holder for the cake maker to use instead of placing the cake on the table. In this way, the end of yarn is not pressed against the bottom of the cake and is much easier to locate.

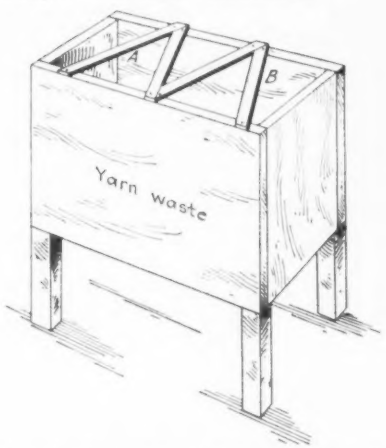
The holder consists only of a cone-shaped piece of polished wood about



Rayon cake makers can avoid having the end of the yarn pressed tightly against the bottom of the cake by using the device shown here. A 3-in.-high wooden cone is mounted on one end of a winder bobbin fastened to the work table.

3 in. tall. This cone is fastened to one end of a regular 8-oz. winder bobbin, and the other end of the bobbin is fastened to the cake-maker's table. *(K-852) R. E. Spear, Montoursville, Pa.*

Special Waste-Yarn Box Helps Bobbin Cleaner



A waste box with wooden slats across the top made the job of the bobbin cleaner easier by reducing the amount of stooping and bending he must do.

In the room where we do our spooling, coning, doubling, etc., we have a man we call a bobbin cleaner whose job it is to remove tails of yarn from the bobbins and spools. This work is done by hand and entails considerable stooping and bending.

In order to eliminate some of the bending, we constructed a waste-yarn box similar to the one shown in the accompanying sketch. Across the open top of the box, we secured wooden slats so that the bobbin cleaner could set his bobbin boxes at a comfortable working height. As he cleans a bobbin, he drops the waste yarn between the wooden slats into the waste box. *(K-840)*

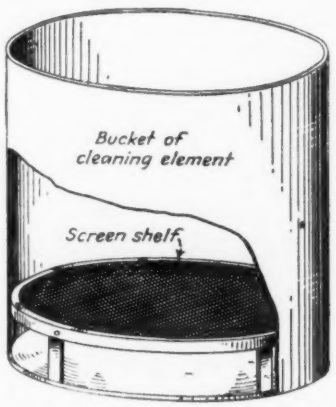
Soft-Faced Hammer Made With Furniture Pad

There are times when a heavy, soft-faced hammer is needed. The usual rubber mallet provides the soft face but not the weight. A good hammer of this type can be improvised at very little cost.

Most furniture stores carry rubber slip-over pads for use on chair legs and other furniture pieces. One of these pads, slipped over the head of the hammer, provides a sturdy, soft face.

Since the cost is negligible, it is a good idea to purchase pads for each weight of hammer used. Then a full set of soft-faced hammers will always be available. *(K-844)*

A Sediment Screen Aids in Cleaning Parts



A screen shelf to hold machine parts off the bottom of the solvent can in which they are washed will prevent sediment from sticking to them.

Most shops keep a can filled with kerosene or other solvent for washing machine parts. Unless the parts are to be re-used immediately, they usually are left to soak in the solvent. After a few parts have been immersed, a sediment of grease and grit forms on the bottom of the can. Manual washing then becomes necessary to get the parts really clean.

The sediment can be prevented from adhering to the parts by installing a screen shelf about 2 in. above the bottom of the can. The shelf is easily made by cutting a circle of screen wire or other rather fine-mesh wire to a diameter a little less than that of the can. Angle iron formed in a circle can be used to hold the screen. Three angle-iron legs can be used to hold the screen above the bottom of the can.

When the can is to be cleaned and the solvent replenished, the shelf can be easily lifted out. *(K-843)*

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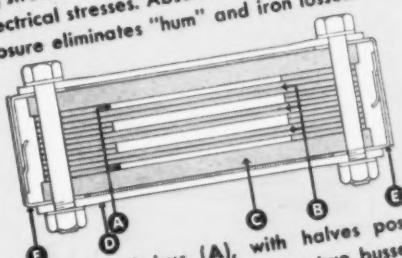
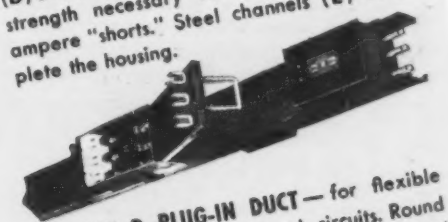
• Electrical power is becoming more and more important in modern production methods. It's needed in larger amounts at many and varying locations dependent upon shop layout and machine arrangement. Square D's Feed-in and Plug-in Duct are a combination with an outstanding performance record in hundreds of plants throughout the country. Feed-in Duct handles heavy loads characteristic of large feeder circuits with high efficiency and low voltage drop. Plug-in Duct permits protected branch circuit "take-offs" at frequent intervals along the length of the duct.

SQUARE D FEED-IN DUCT—heavy power feeder with lowest known voltage drop characteristics. Exclusive design requires no ventilation for limiting temperature rise—permits completely enclosed, dust-excluding structure. Rigid construction resists heavy electrical stresses. Absence of all-metal enclosure eliminates "hum" and iron losses.



"One-split" bus (A), with halves positioned on either side of other two busses, permits close spacing and electrical symmetry important to reduction of both energy loss and voltage drop.

Solid ebonized asbestos insulating plates (B) and (C) which totally enclose bus, have great mechanical and high dielectric strength, conduct heat readily, are impervious to moisture and resistant to arc. Surge clamps (D) every 24" give structural and mechanical strength necessary to withstand 50,000 ampere "shorts." Steel channels (E) complete the housing.



SQUARE D PLUG-IN DUCT—for flexible power distribution to branch circuits. Round bus bars provide greater mechanical strength and resistance to short circuit stresses. Steel enclosure and rotating doors over plug-in openings exclude dust and dirt.

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A quick glance tells you what Square D Feed-in and Plug-in Duct do. It takes a closer look to learn how they do it and why they do it better. Your nearby Square D Field Engineer will be glad to give you the complete story. Or write for detailed information.

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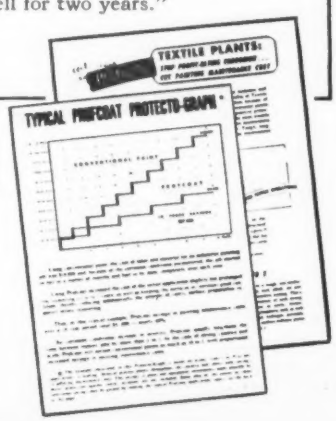

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Questions AND Answers

Carbonizing and Drying Directly Affect Dyeing

Technical Editor:

The inclosed samples of piece-dyed woolen fabrics show very definite dye streaks. We are having this trouble on many of our colors.

The finishing process on the inclosed samples was as follows:

The goods were fulled to 59- to 60-in. width with a 6% soap solution. Three washings were used. We placed five pieces of the goods in the washer and ran them for 15 min. in 18 to 20 gal. of soda ash at 50° Be. They were then rinsed for 10 min. The second bath consisted of 20 gal. of 5% soap and 16 gal. of soda ash. The goods were run 15 min. at 50° Be.

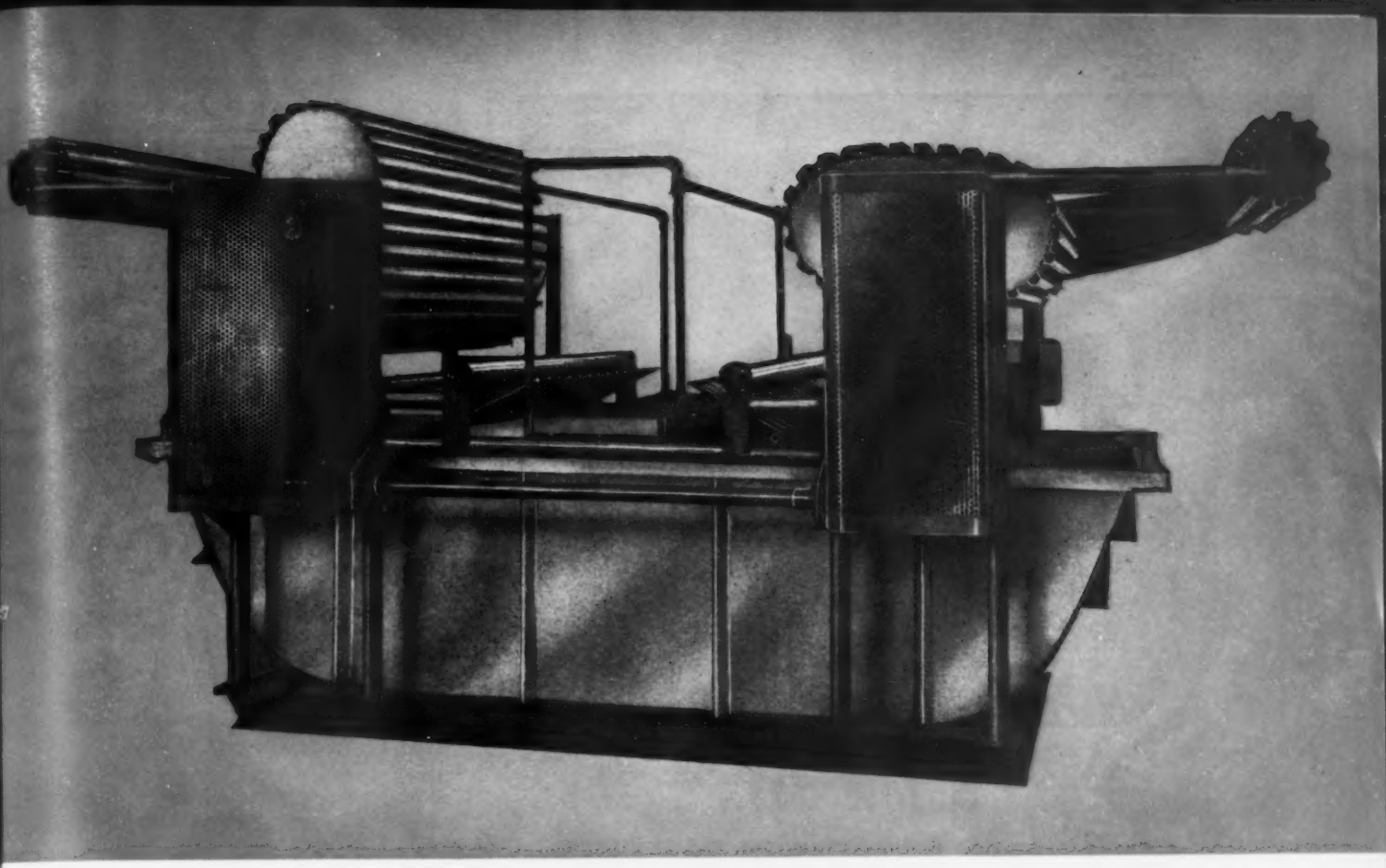
Since this second bath never makes a good, white lather, we rinsed again and added the third bath. This bath consisted of 12 gal. of 5% soap and 9 gal. of soda ash. The goods were run 20 to 30 min.

For the final rinse, we started slowly, adding a little water for 30 to 45 min. Then for 1 hr. we rinsed rapidly, with plenty of water. The goods were then carbonized, centrifuged, and dried in sunshine.

We sometimes dye with the acid of the carbonizing process. At other times we neutralize the carbonizing acid and add other acid. In either case, the dye results are the same. The proportion of water to dye is 15 to 1. (9236)

A chemical examination of the sample swatches indicates that the cause of the dye streaks in the fabrics can be traced to carbonizing. You did not indicate how you dry the goods after hydroextracting to remove excessive carbonizing acid. It is extremely important that the drying operation be carefully carried out. For good results, the cloth must be uniformly dry from selvage to selvage throughout its length.

An error commonly made is that of trying to dry the cloth too fast. Another is that extraction of the carbonizing acid is not uniform. In either case, the wool is not uniformly affected during the baking process. After the goods have been dyed, the unlevelness



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This *is* such a machine. Its greater production makes one Duplex come close to replacing two single-line machines. Its continuity of controlled efficiency handles larger runs of yardage with the use of less dye liquor, only one of its economies. Now being used in a number of plants on a wide range of fabrics from lingerie sheers to suitings. It has an adaptability unmatched.

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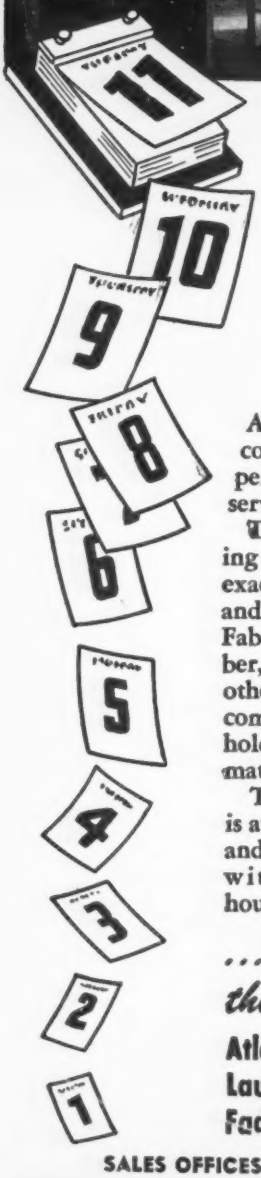

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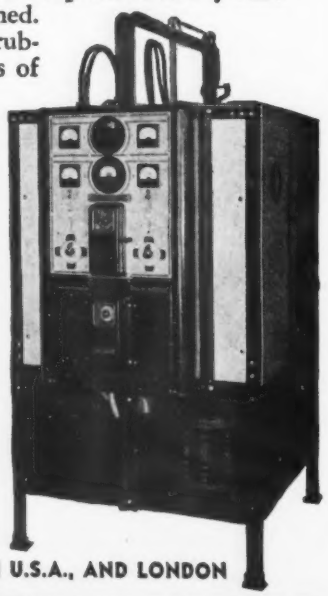

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of shade is about equal to the unevenness of drying or the unevenness of distribution of the acid in the goods at the time of baking.

You should check both your carbonizing process and your drying after hydroextraction. You are almost certain to find your trouble in one of these processes.

Burling and Mending Is Good Business Now

Technical Editor:

Can you furnish me any information in regard to commission burling and mending?

I am thinking of going into the business and should like to obtain the prevailing prices charged for such work in order to set up a reasonable price list. (9234)

There are a number of small commission mending and burling concerns that, at present, seem quite successful. The larger worsted mills have trouble in securing enough experienced burlers and menders and are sending out a lot of work on a commission basis.

Some burlers and menders work on a 10% cost-plus basis; that is, they charge 10% above all labor and operating expenses. Others charge 50% above the actual labor cost, using the other 50% for overhead and profit.

If you intend to hire help, it would be wise to consult a lawyer and check on the various labor and health laws in the state in which you intend to operate.

Disposal of Flock Depends on Its Quality

Technical Editor:

We are manufacturers [in Australia] of wiping cloths of various types and other soft-filled fabrics. As you no doubt are aware, when material is fed into a "ragger" to be pulled, teased, or flocked (whichever term is used in America), a certain amount of dust and fly is caused by the fibers breaking.

This fly is looked upon in this country as purely a loss of weight and is usually burned. We understand, however, that some paint and lacquer manufacturers in the United States have some method of spraying this fly onto a glutinous surface and creating a cloth-cover effect.

Do you have any information on this subject? (9233)

The most desirable flock currently used in the United States for producing the cloth-cover effect you described is not the dusty waste from a shoddy plant, as is the fly you mentioned. The flock normally applied over an adhesive surface to produce

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MATERIAL
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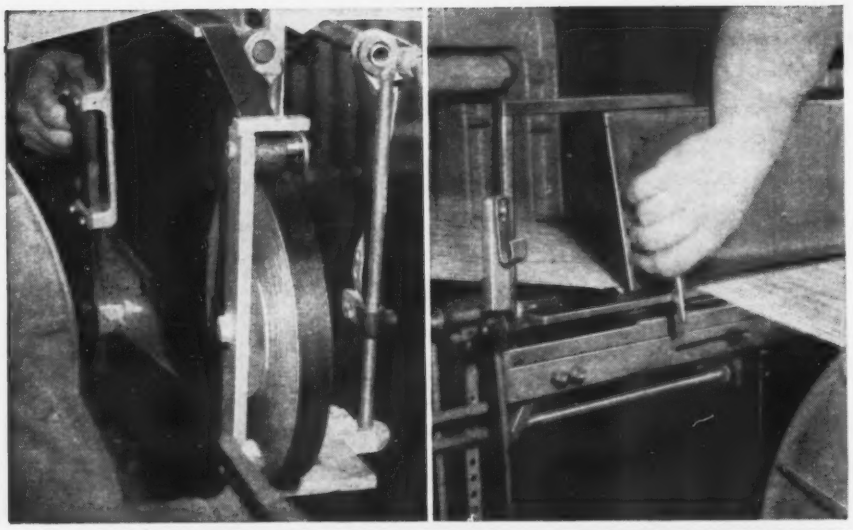

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The Queen City Textile Corporation of Allentown, Pennsylvania, has speeded up direct warping operations through the use of a simple mechanical device for applying the under half of their "SCOTCH" Super Strength Tape sandwich as shown very clearly in the picture on the left above. The upper strip of "SCOTCH" Super Strength is then applied manually.

When pressure sensitive "SCOTCH" Tape was first presented to the textile industry its superior cleanliness, speed and economy of application won it quick acceptance. Now the added ease and speed of mechanical application to the under side of the warp threads shortens still more the time required for sandwich application.

There is a "SCOTCH" Tape field engineer in your general vicinity who will be happy to call at a word from you and give you first-hand evidence of "SCOTCH" Tape Savings. Why not drop us a line and say, "Send that man."

SCOTCH BRAND
Super Strength TAPE

ANOTHER 3M COMPANY PRODUCT

Made in U.S.A. by MINNESOTA MINING & MFG. CO. St. Paul 6, Minn.

velour-like effects has an appreciable staple length.

Often of cotton or rayon, the flock is used not only on fabric bases but is also applied to the interior of some portions of automobiles. One example of the latter use is in the trunk compartment in order to produce a smooth finish and to reduce noise. Another use of such material is in radio sets.

Waste from a shoddy plant has some use. It is frequently applied to various heavily fulled woolen goods to add weight to the fabric. Another use is in fertilizer. Undoubtedly, disposing of your waste for fertilizer use would be more profitable than burning it.

Only One Textile Mill Is Located in Philippines

Technical Editor:

Do you have a list of textile-manufacturing plants in the Philippines? (9235)

There is only one textile manufacturer in the Philippines, according to the latest information, dated Dec. 31, 1947, available from the U. S. Dept. of Commerce. The name of the company is the National Development Co., a spinning and weaving mill. It is a Philippine government corporation.

Chemistry of Starches Interests Finishing Man

Technical Editor:

Will you please give me the chemical differences between: corn starch, potato starch, rice flour, rye flour, and wheat flour.

If you have any pertinent information on the use of rye flour for finishing purposes, I would appreciate this information also. (9241)

According to present theories, starch contains at least two carbohydrate substances, both polymers of glucose but differing markedly in properties and structure.

By recently developed techniques, fractionation of starch into two components has been accomplished. The minor component (presently designated as the "A-fraction") in the case of corn starch appears to consist of long chain-like molecules. This fraction is unstable in a colloidal sense and is responsible for the gelling and so-called retrogradation of starch. It is characterized by the production of a blue color with iodine. The major component (designated as the "B-fraction") is presumed to have a very large and ramified molecular structure, possibly a tree-like configuration with short linear branches. It yields reddish

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Send for all the facts about the many ways QUADRAFOS can help you add profits to textile wet processing.

softens water without precipitation...deflocculates ...redissolves precipitates...promotes free rinsing

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Preserve crisp detail and contrast of prints by using time-tested Culofix as an after treatment.

Kill bleeding troubles no matter where they occur—in the finishing bath—batching up after dyeing—in cross dyeing, etc.

Improve water fastness of direct colors and impart a very desirable soft, full finish at the same time, thus eliminating an extra finishing operation. (Where no softening action is needed, Culofix L should be used.)

If fastness to water or prevention of color migration is essential to your direct color dyeings, write for Technical Service Bulletin #204-106.1. Our technical staff is at your service without obligation.

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Manufacturers of Industrial Chemicals for Over 40 Years

NEWARK, NEW JERSEY

MANUFACTURERS' BULLETINS

A REVIEW of the month's outstanding trade literature. Items are listed one month only—no repeats.

1. Avisco crimped staple rayon—a description of its properties, characteristics, and uses, a list of types available, and actual samples of the fiber and fabrics made from it are contained in a booklet issued by American Viscose Corp.

2. Bearing-load computation, the fourth of a series of books for engineers, is available to designers and engineers from New Departure Div., General Motors Corp.

3. How to duplicate reports on orders in 25 sec. and how to eliminate multiple posting in accounting are two of the many time- and labor-saving practices described in a new booklet, "The Simplest Business System," issued by Ozalid.

4. Information on fastness to dry cleaning of vat-color dyeings, solubilities of Luxol colors, 1948 spring-season shades on nylon hosiery, and a new process for dyeing carbonized piece goods with acid dyestuffs are some of the contents of a recent issue of *The Technical Bulletin,* issued by Du Pont's Organic Chemicals Dept.

5. Three basic speed-control units made by Reeves Pulley Co. and their uses are described and illustrated in a recent folder.

6. Uses of snap-action switches in industrial plants are described and illustrated in Micro-Tips, publication of Micro Switch.

7. Textile drying, its theoretical and practical aspects, and its future trends are discussed in a booklet available from Proctor & Schwartz, Inc.

8. Onyxsans, cationic softening agents of Onyx Oil & Chemical Co., are described in a folder discussing principles involved in their use and recent improvements.

9. Stock silent chains and sprockets recently developed by Link-Belt Co. are described, and drives from ½ to 50 hp. are tabulated, in booklet No. 2125.

10. The Shirley electric hygrometer for measuring moisture in textile materials is described in a folder available from John Dalglish & Sons.

11. An industrial scale available in ranges from 0-500 to 0-10,000 lb. is described in a folder offered by W. C. Dillon & Co., Inc.

12. A wire and cable catalog listing thermoplastic, braided, and leaded building wires; BX cable, and others made by General Electric's Appliance & Merchandise Dept. was recently issued.

13. Continuous vat dyeing is discussed in two parts, "Selection of Dyes for Continuous Pigment Pad-Dyeing Processes," and "Laboratory Apparatus for Studying Continuous Dyeing" in the recent Technical Bulletin No. 793 issued by Calco Chemical Div., American Cyanamid Co.

14. Fluorescent lighting equipment of Day-Brite Lighting, Inc., is described and shown in a recent series of bulletins.

15. Continuous production of rayon tire cord as performed at Industrial Rayon Corp. is described and shown in a recent issue of *Crane Valve World.*

16. A window squeegee with a brass holder and a double-edged floor sqeegee, both recently announced by Fuller Brush Co., are shown in a folder.

17. Use of the Ionotron on tape condensers and deliveries of tape condensers are two topics discussed in the first issue of the recently resumed *Davis & Furber News.* Foremen in woolen and worsted carding, spinning, dressing, and napping departments are invited to have their names added to the mailing list.

18. Fans and air circulators for use in windows, offices, and mills for air-circulation purposes are shown and described in a recent catalog of C. & H. Air Conditioning Fan Co., Inc.

19. Monel-metal flexible tubing and its physical characteristics and corrosion-resisting properties are described in a new folder published by Titeflex, Inc.

20. Greater efficiency per spindle is claimed by Ragan Ring Co. for its new rings and travelers as described in a new bulletin. The illustrated booklet points out the advantages of this especially designed ring and traveler that is said to produce a more uniform tension on the yarn as the tangental pull changes.

21. Vertical turbine line pumps, tested and approved by Underwriters Laboratories, Inc., and Associated Factory

MILL EXECUTIVES may secure copies of literature reviewed on these pages by using the post cards below. Fill out COMPLETELY one coupon for each piece wanted.

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Mutual Fire Insurance Cos., for supplying water for fire protection are described and shown in a recent booklet issued by Peerless Pump Div., Food Machinery Corp.

22. **High-pressure condensate-return systems,** their operation and advantages, are described in a booklet offered by Cochrane Corp.

23. **The Saxl tension meter** and its use in checking tensions are described in a booklet available from Saxl Instrument Co.

24. **Oily deposits** as a fire hazard and other aspects of fire prevention are described in a recent issue of *Factory Mutual Record.*

25. **How high-interrupting-capacity fuses** provide short-circuit protection is described in publication No. 192 of Electric Machinery Mfg. Co., showing construction, operation, and application of Hi-Fuse combination starter for high-voltage induction and synchronous industrial motors.

26. **Nylon warp-knit fabrics,** including tricot, Milanese, and simplex, and some problems in their processing are described in a recent *Nylon Technical Service Bulletin* issued by E. I. du Pont de Nemours & Co., Nylon Div.

27. **Baldwin-Rex flexible couplings** for roller chain, their design, selection, application, and prices are described in a booklet offered by Chain Belt Co.

28. **Medium-duty belt conveyors,** horizontal and inclined, are described in a booklet available from Island Equipment Corp.

29. **Cloth, warp, and tenter dryers;** singers, and resin-curing machines for the textile industry are described in a recent folder issued by Industrial Heat Engineering Co.

30. **Wheel-Ezy hand trucks** made by Rapids-Standard Co., Inc., are described and illustrated in a recently issued bulletin.

31. **A CO_2 indicator** for checking heat losses, its construction and operation, are described in bulletin No. 206 of Burrell Technical Supply Co.

32. **Dobeckmun metallic yarns** are described in a question-and-answer booklet recently issued by the company. Yarn samples are included.

33. **Chemical feeders** of various types and their use in feeding chemicals to raw water to correct or eliminate impurities are described in a booklet offered by Liquid Conditioning Corp.

34. **Silastic,** Dow-Corning's silicone rubber is described in issue No. 5 of *Silastic Facts.* Complete physical-property data and uses are included.

35. **Wool grease** recovered by Arlington Mills, its properties and availability, is discussed in a folder issued by the company.

36. **Prevention of downtime** caused by bearing failure through use of flexible couplings is discussed in a booklet offered by American Flexible Coupling Co.

37. **Spinning frames** made by H & B American Machine Co. and their features are described in a folder offered by the company.

38. **Floor finishes** for maple, beech, and birch floors which are approved for heavy duty by Maple Flooring Manufacturers Association are listed in a recent folder issued by the association.

39. **Butterfly or disk-type valves** made by R-S Products Corp. are shown and described, along with application and other engineering data, in the company's catalog No. 17.

40. **A flat-knitting machine** made by C. Huppert & Co. is described in a recent bulletin.

41. **Fabric-cutting machines,** hand and power-operated, and shears are described in a recent folder offered by Spadone Machine Co.

42. **Insulated metal wall panels,** Robertson Q-Panels, fabricated from Galbestos, aluminum, and stainless steel; their design and their use in building construction are described in a booklet available from H. H. Robertson Co.

43. **Overhead transportation** for materials in process is described in a folder issued by Richards-Wilcox Mfg. Co., showing Zig-Zag conveyors in use.

44. **Nonisol 210,** a polyoxalkylene fatty ester, its applications and properties are described in a technical bulletin offered by Alrose Chemical Co.

45. **Strapping equipment** made by A. J. Gerrard & Co. is shown in a booklet describing steel strapping, seals, anchor plates, and strapping tools.

46. **Industrial footwear** of rubber is shown and described in a recent catalog section issued by B. F. Goodrich Co.

47. **Handling rayon cakes** by the Bruegger system, which consists of a cake reel, a drawing-off device, and a mounting apparatus, is described in a folder offered by Bruegger Winding Co.

48. **Power generation,** distribution, and control equipment is shown and described in a booklet available from Allis-Chalmers Mfg. Co.

49. **The one-process picker** made by H. & B American Machine Co. and its outstanding features are described in a folder offered by the company.

50. **Gravity roller conveyors** of various types for various applications are described and shown in a booklet issued by Harry J. Ferguson Co.

TO GET MORE INFORMATION

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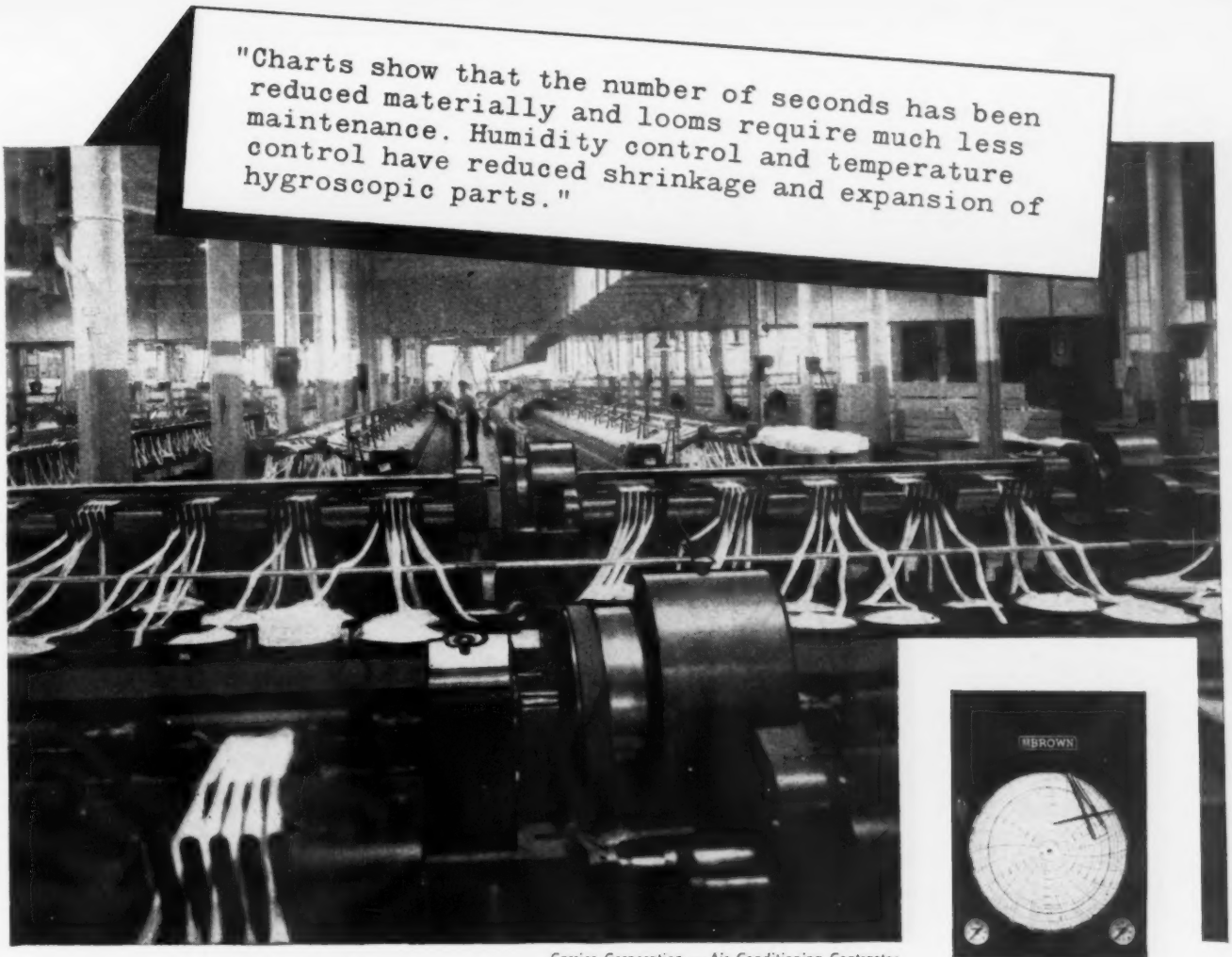
"Charts show that the number of seconds has been reduced materially and looms require much less maintenance. Humidity control and temperature control have reduced shrinkage and expansion of hygroscopic parts."

Carrier Corporation — *Air Conditioning Contractor*
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HONEYWELL Air Conditioning Controls have certainly paid off in this southern mill. Five central station systems provide evaporative cooling for temperature and humidity control in carding, spinning, spooling, doubling, twisting and weaving rooms. Records show an increase in production efficiency of 2½% since the system was installed. Loom maintenance has been materially reduced, overheating has been decreased and morale of the workers has greatly improved.

Honeywell pneumatic controls are used exclusively in this installation. Their extreme sensitivity and a sturdy ruggedness are responsible for the exact control of temperature and humidity within the close limits required in textile mills.

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The Brown Instrument Division of Minneapolis-Honeywell supplies the Textile Industry with instruments and complete systems for the measurement and control of textile processes. Each unit of every control system is accurately co-ordinated with operating conditions to increase efficiency and production, and assure economical operation. Among these systems are:

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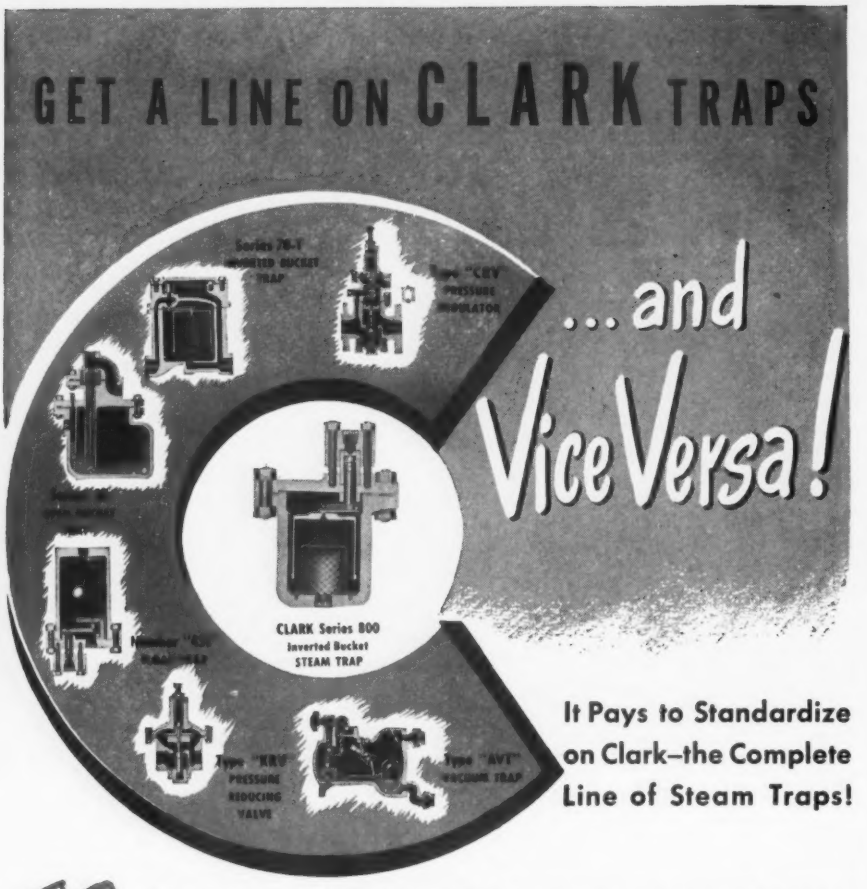
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colorations with iodine. This fraction is stable colloidally and functions as a protective colloid for the A-fraction.

It is well known that the granule size and shape, the gelatinization temperature, and the paste characteristics of various starches differ according to their origin. The granule structure of starches has long been used as a method for microscopic identification.

In a general way, starches derived from grain seeds yield pastes that are shorter and which gel or set back to a greater degree than those derived from tubers, such as potato and tapioca. A notable exception to this generalization is in the so-called waxy starches where, by selective hybridization, a variety of grain has been developed which will yield a starch having the paste characteristics of one derived from a tuber. An example of such a product is waxy maize, which has the paste characteristics of tapioca starch in that its paste has length and it does not set back on cooling and standing. Interestingly enough, this waxy starch shows a complete absence of the gel-forming A-fraction.

Starches from various sources, with the exception of waxy starches, have all been found to contain both the A (gel) and B (sol) fractions in varying ratios.

The physical behavior of starch and its various modifications may be traced primarily to two factors: the organization of the total starch substance in distinct granules, and the specific effects of the component fractions. Thus, large-granule starches, such as potato, gelatinize in hot water to give pastes of high superficial viscosity due to crowding of the tremendously swollen granules. Such pastes are relatively fragile and may be greatly thinned by vigorous stirring, which partly disintegrates the granule structure. Small-granule starch, such as rice, gives pastes of lower but more stable paste viscosity.

The various industrial uses of starch depend in large measure on the properties of the individual fractions. A starch paste may function in two ways: it may be used for its flocculating, its adsorptive, or its gel qualities; or it may act as a sol, or protective colloid. These properties derive directly from the A and B fractions respectively. In many instances, it appears that only one action is required and the presence of the other starch component may even be detrimental.

Boiled starch pastes tend to gel on cooling. This action must be attributed primarily to the linear A-fraction that has been partially leached from the swollen granules and which subse-

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Allen quality starts with the use of Allenoy steel, developed specially for the purpose. The strength of the steel is preserved and reinforced at vital points leaving the steel fibres uncut and intact. Not only is threading to class 3 fit held to extreme accuracy, but *extra* operations assure maximum grip. Heat treatment is regulated to laboratory standards of precision. Quality control is assured by laboratory testing of every batch in addition to the most careful gauging and inspection at the machine. These are some of the reasons for the higher uniform standards of Allen screws. Write us direct for descriptive folders, or technical information.

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ALLEN HEX SOCKET FLAT HEAD CAP SCREWS

Allenoy steel plus positive wrenching makes them vastly superior to ordinary cap screws.

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quently sets up an interlacing network within and about the granules. The various starches exhibit different gelling tendencies; corn starch gives a firm gel, while potato and tapioca pastes are weak and slimy. These variations may be due in part to differences in content of A-fraction. Of more importance is the fact that the linear A-fractions differ in molecular constitution, and such structural considerations influence gelling.

The mere knowledge of the existence of starch fractions is insufficient to explain all the physical differences in the various starches. There are investigators who attribute these differences to the length and complexity of the glucose chain in the A-fraction, but there is still a scarcity of evidence to support this contention. Others conceive the difference to be due to the presence of small amounts of non-carbohydrate material naturally occurring in certain of the starches. For instance, the paste characteristics of potato starch can be markedly altered to resemble those of corn starch by adsorbing on to the starch fractional percentages of fatty acid. The net effect of such treatment is to shorten the paste substantially so that it no longer has its native characteristics.

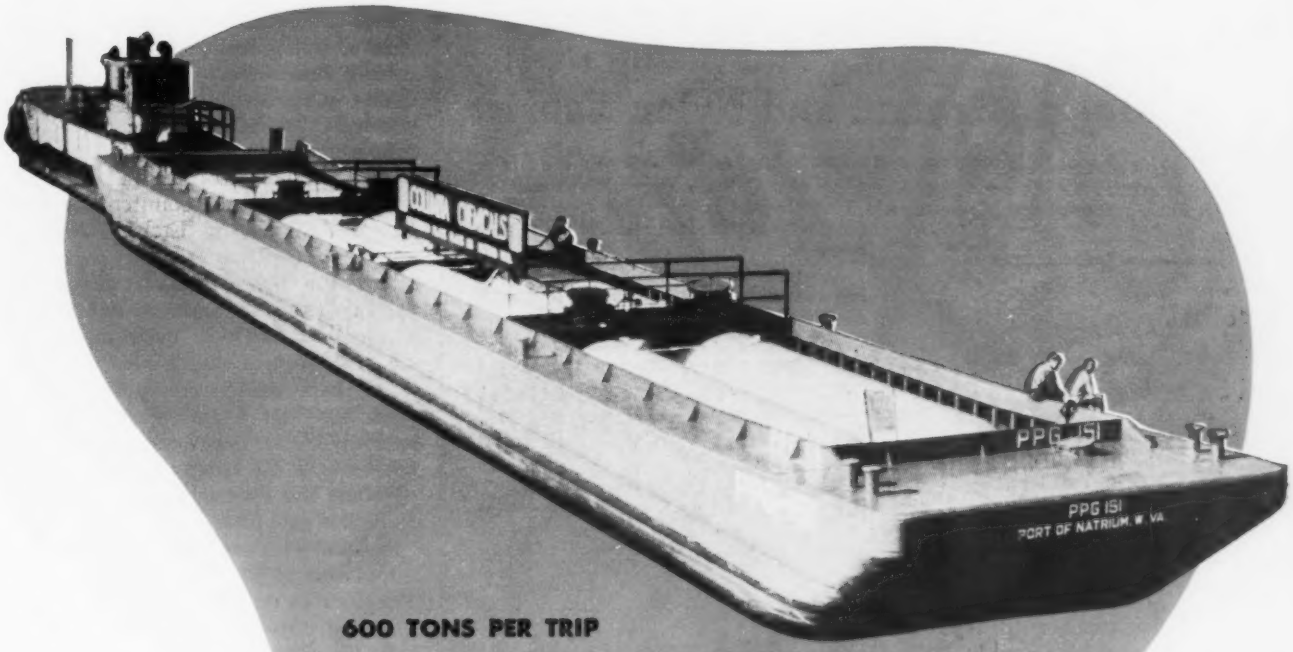
Of the five starches listed, only one, potato starch, is derived from a tuber. Its paste characteristics, as indicated previously, are noticeably different from those of the other four. These characteristics have long made this starch preferred for certain types of textile applications where the paste properties are contributing factors to the type of sizing or finishing produced.

Corn starch exhibits the characteristic paste properties of cereal starches; but through the many modifications made available by starch manufacturers, its properties have been varied widely to suit special requirements.

Rice flour is characterized by the fact that it has the smallest granule size of the common commercial starches. It has not found wide industrial use in the textile industry partly because of its normal economic disadvantage and limited availability.

There is a considerable distinction between wheat flour and wheat starch. The latter is prepared from wheat flour by treatment with water, whereupon the protein aglutenizes and the starch is removed from it by washing and kneading. While wheat starch shows distinct retrograding properties from a chemical point of view, its pastes have always been characterized as opaque (a visual evidence of retrogradation) and lardy.

Record volumes of Chlorine shipped via waterways



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Cradling four huge tanks in a 175-foot all-steel hull, each barge has a capacity of 600 tons of liquid chlorine. Many special features for handling and unloading are embodied in the design, which is based on a "pilot model" barge placed in service by Columbia several years ago.

Fleets of chlorine barges—the first ever designed specifically for this service—have been transporting record quantities of chlorine from Columbia's plant at Natrium, West Virginia . . . and from the plant of its affiliate, Southern Alkali Corporation, at Lake Charles, Louisiana. Operating along the Ohio-Mississippi inland waterways and the inland waterways system of the Gulf Coast, these chlorine barges provide obvious advantages to large-volume users of chlorine in these areas. They are among the most recent examples of the progressive service rendered by Columbia-Southern, the nation's largest merchant producers of chlorine. Pittsburgh Plate Glass Company, Columbia Chemical Division, Fifth Avenue at Bellefield, Pittsburgh 13, Pennsylvania.

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PITTSBURGH PLATE GLASS COMPANY

ONYX IONICS

Newsworthy items for textile technologists and production men

May, 1948

For Improved Stiffening and Sizing of Cotton, Rayon, Acetate and Nylon Fabrics

The Xyno Resins offer an interesting range of effects in body and stiffness on fabrics of all kinds. These resins are water dispersions of thermoplastic synthetic resins, which dry to a clear, tough finish without impairing luster, and which require no curing or high temperature "setting." Goods are treated in the usual manner.

Resin 362 is a viscous dispersion, providing the stiffest hand of the three Xyno Resins. It is particularly useful on ninons, marquisettes and organdies.

Photograph courtesy Pacific Mills

Resin S 69 is a water-thin dispersion, imparting a unique, dry, "springy" hand which is particularly attractive on nylon, rayon and acetate nettings. S 69 provides the best wash fastness of all the Xyno Resins.

Resin AA 40 is a thin dispersion with a very general range of application, though it is particularly useful in sizing and stiffening ribbons and dress piece goods.

Maprofix Paste Does a Superior Job of Wool Scouring

Maprofix Paste is one of the most potent of scouring agents. It leaves wool skeins, raw wool and wool and worsted piece goods in firmer, more resilient, fuller bodied condition than the best grade of soap, and rinses out faster and better. Scouring costs with Maprofix Paste are materially less than with high quality soap.

A plant-scale tryout of Maprofix Paste will convince you of its superior emulsifying and detergent action. We shall be glad to work out the details of such a test with you at any convenient time.

If you'll ask for Onyx Technical Bulletin 15-T, you can study the chemical and physical characteristics, advantages and performance of Maprofix Paste in detail.

Cationic Moth-Proofing Lasts!

Two Onyx cation-active quaternary compounds have been highly successful in moth-proofing. Not only is the effect obtained notably resistant to dry cleaning and laundering, but treated goods have marked bacteriostatic and fungistatic properties. Moreover, considerable softening action is also obtained during the moth-proofing treatment.

Imularv P is sold in 50% water solution . . . Imularv S in 75% alcoholic solution. The former is usually employed in the pad, using a 2% solution with the squeeze adjusted to 100% take-up. Treated goods are hydro-extracted and dried. Imularv S is used in organic solvent solution, usually applied as a spray, although it is often used in fresh solvent after dry cleaning. For spraying, a 1% solution of Imularv S in Varsol, carbon tetrachloride, etc., is used. For use after dry cleaning, a 1% solution in regular dry cleaning solvent is employed.

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Creping Summary

(*Continued from page 123*)

often lower than in this country; for instance, typewriter cloths woven from spun or spun and continuous-filament rayons were being mildly scoured and peroxide-bleached on winches. For this class of work, very high absorbency is usually demanded. As far as all-rayon cloths were bleached at all, they were generally treated with peroxide on winch machines.

With respect to rope washing, the most modern of the counter-flow machines designed by Erckens & Brix deserves consideration, especially in relation to the processing of cloths woven from spun-rayon-and-cotton yarns. The bowls of these machines are of Vulcanite and rubber and are fitted with compensators to permit series running. Counter-flow washing is secured by means of oblique wooden partitions in the boxes. An important economy was claimed when water had to be pumped from deep wells.

A new-type scutcher for opening cloth from rope form was seen in operation in one works, for which it had been constructed to their own design by Gruschwitz, of Olbersdorf, near Zittau. The long traverse through the air between pot-eye and scroll rollers is avoided by the use of a shorter water-borne traverse (Fig. 1). From the pot-eye, the cloth falls into a water tank 7.75 yd. long and moves forward to the scroll rollers without tension or restraint.

Hot or cold water is used here according to rinsing requirements, the flow being with and not against the cloth for smooth opening. Speeds of up to 198 yd. per min. were claimed, above which the cloth tended to run off the sides of the scroll rollers. The machine was used not only after bleaching, but also following washing off through rope washers after dyeing on the jig, the aim being to achieve a "natural" shrunk finish.

CREPING. Several plants had a considerable number of pre-creping calenders; in one, the engraved bowl was invariably placed below the elastic cotton bowl, as this was considered to afford a better finish with less weakening of the cloth. The engraved bowls were usually heated with steam to temperatures up to 176° F. with acetate rayon and to about 193° F. with viscose. The pressure applied varied up to about 20 tons on a 60-in. bowl.

Creping in book form on stars was employed extensively, particularly with fabrics of the highest quality, the selvages of which were often taped. Solutions containing from 1 to 3% of

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caustic potash were preferred occasionally.

Considerable attention had been devoted to continuous creping, and interesting machines designed in individual works were observed. These machines followed four general designs, to afford the time required for the process with a minimum disturbance of the cloth.

In the first (Fig. 2), viscose or cuprammonium rayon cloth was impregnated with weak alkali through a mangle and then lifted by winches which rippled the cloth on to a succession of five endless rubber blankets, after which it was washed off through a series of large rope-washing becks. In a variant of this machine, the initial impregnation was omitted, and instead the cloth was sprayed from above with the alkali as it passed along over the blankets.

In the second design, the cloth was carried by poles on to an endless chain either during or subsequent to treatment with the creping liquor. Three variants of this plan were observed. In one (Fig. 3), the cloth was run through a two-bowl mangle, and then looped on to the poles by an automatic control with interrupted movement of the chain. The poles then passed through a long tank; and, during their passage, the cloth was sprayed with the creping solution. In another variant, the cloth was fed by a liquor injector (Fig. 4) on to continuously moving poles which passed through a festoon liquor tank. In the third variant the cloth traveled loosely through a range of open becks, after which it was picked up on a festoon chain which traversed it back above the becks. The principle of a festoon liquor tank was also employed in the scouring of velvets and plushes.

In another creping-machine design (Fig. 5), the cloth was rippled by a liquor injector between two endless blankets, the lower running under the surface of the creping liquor. This machine, designed by Erckens & Brix, represents one of the earliest methods of continuous creping developed in Germany; but no example of it was seen in any of the plants visited. Speeds of from 8 to 25 yd. per min., affording a treatment time of from 10 to 3 min., were claimed.

Another type of creping unit employed the principle of moving the cloth by the gradual flow of liquor in the same direction, the development of the process being illustrated by a series of four machines. In the first and simplest form, the cloth was rippled onto a flat tray covered with a monel-metal sheet, along which it was washed slowly by the flow of the creping liquor. Production on this machine was very slow, owing to the

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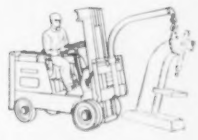

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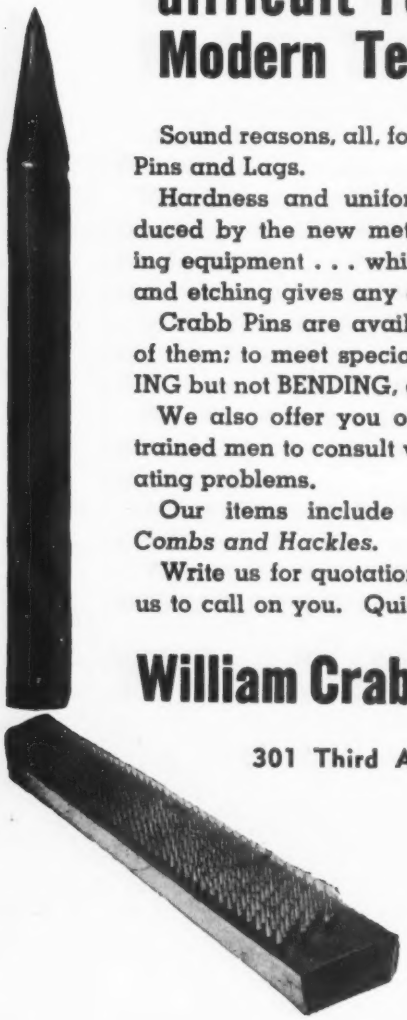

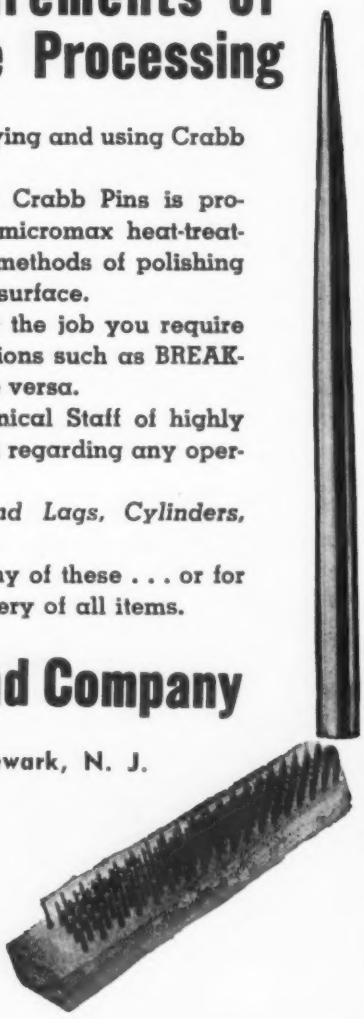

relatively short length of contact of the cloth with the liquor.

CONTINUOUS CREPING. The most recent machine, which overcomes the foregoing drawback, is illustrated in Fig. 6. The cloth passes through trays made of sheet metal covered with Vulcanite. It is borne along by the flow of liquor, which wells up through the perforated bottoms of the mangle boxes and floods over weirs into the trays. After passing through two boxes in this way, the cloth ripples down into a creping tank, in which it lies for about 15 min., afterward receiving on reverse-slope trays a succession of treatments to wash, sour, wash, and neutralize the cloth. All carrying rollers were driven in order to minimize tension on the cloth; and, where a light nip was required, sponge rubber rollers were used against Vulcanite bowls.

Two of these machines were placed one on each side of a continuous desizing, scouring, and washing range of unusual design (Figs. 7 and 8) through which the cloth was passed without a break in the continuity of processing. The cloth from the two creping machines is gathered into rope form and passes as a pair of ropes along overhead-driven winchs and down into the range. This range consists of three large boxes, each divided into ten sections, through which the desizing and soap-scouring liquors; and the water used for washing pass respectively from section to section over weirs at the end of each.

The desizing and scouring liquors are returned to steam-heated feed tanks by centrifugal pumps. In each transverse section, liquor and cloth move in the same direction so that the former bears the latter along. However, when they are separated at the end of each section, liquor and cloth pass into sections on opposite sides of the one they have left; therefore, their general progress along the machine is in opposite directions and the benefits of counterflow washing are thus secured.

The cloth passes from section to section over winchs, each section being 3.3 yd. long and holding about 16.5 yd. of each of the two cloth ropes. The speed of creping is 15.4 yd./min., so that the two machines crepe, wash, desize, scour, and wash 30.8 yd. of cloth per minute. On leaving the range, the strands of cloth are separated by hand, but mechanical means of doing this are planned. The whole process was claimed to be very economical of labor, requiring only one charge-hand and four operatives.

For creping viscose cloths, solutions containing from 6 to 20% of caustic soda were stated to be employed at a temperature of from 50° to 54° F.; re-

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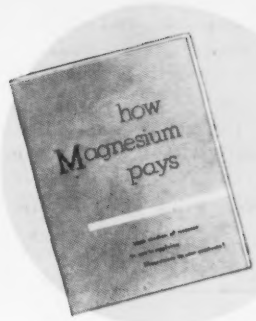

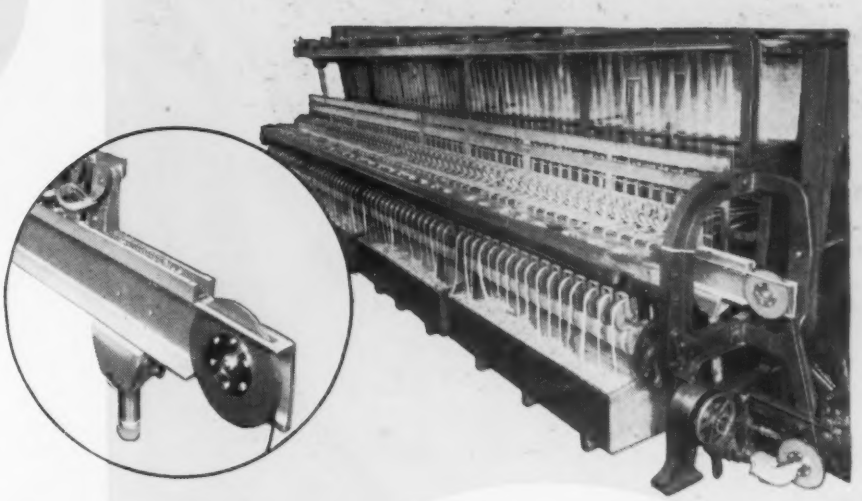

How Magnesium Pays

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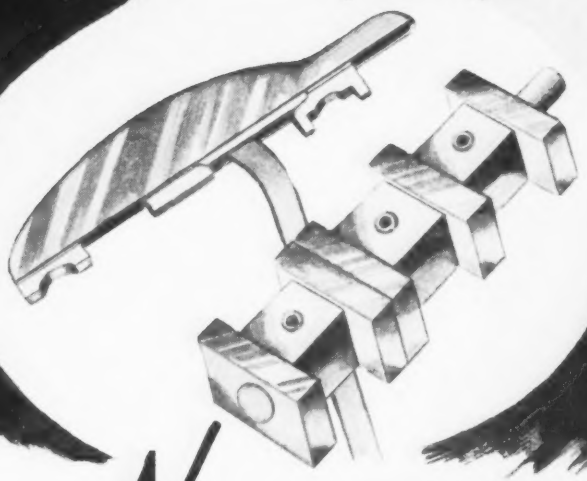

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frigeration plant had not been installed, but was contemplated. The unusually high strength of caustic soda employed suggests a possibility that a proportion of the cloths processed may have contained yarns of relatively low creping twist. For creping fabrics containing acetate yarns, soap solutions were used.

Rebeaming Bemberg

(*Continued from page* 113)

creel in the following order: two beams S twist, two beams Z twist, two beams S twist, and then two beams Z twist. The beams are laid into the crossing reed, one by one, by means of the paper tape, in the same manner as is done in slashing. The yarn is laid into the zig-zag comb and is wrapped around the empty loom beam.

Before starting the rebeamer, it is most important that all the ends are tight. The machine can then be started up at crawling speed while the operator checks all the sheds behind the reed for crossed and slack ends. If everything is found in good order, higher speeds can then be run.

The tension of the yarn coming off the section beams is regulated by the tension ropes, which, if of the asbestos type, will not wear through so quickly as plain ropes.

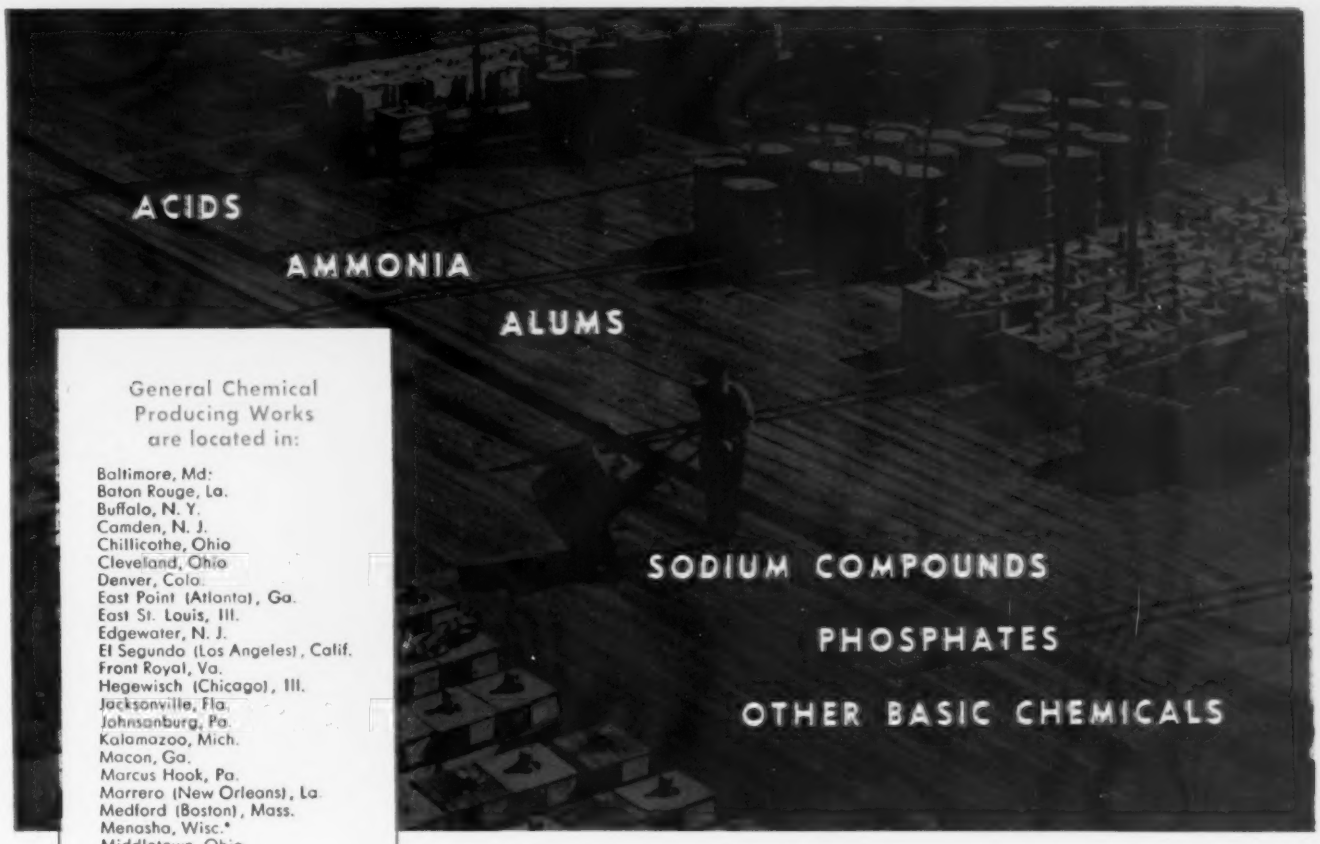
The higher the tension of the yarn, the less rolling of the ends will occur. However, a reasonable limit will have to be observed to avoid end breakage. A compromise must be made between rolling and end breakage.

Since there usually are no dropwires or any other stopping devices when an end breaks, it is entirely the operator's duty to discover broken ends, ringers, slack ends, etc. He should be most careful not to cross ends when new ones have to be tied in, as crossed ends will cause rolling behind the reed.

The loom beam should be built as evenly as possible, avoiding high or low selvages.

After the loom beam is filled, a lease is taken by bringing the lease rods into the lease-rod stand. The lease is then made in the same manner as when slashing on the cotton-system.

Basic principles in warping Bemberg crepe on the cotton system are these: 1. Maintain low and even humidity in warping and rebeaming. 2. Use the shortest possible distance from the section beam to the crossing reed on the rebeamer. 3. Avoid crossed ends. 4. Watch out for lost ends, which cause ringers.



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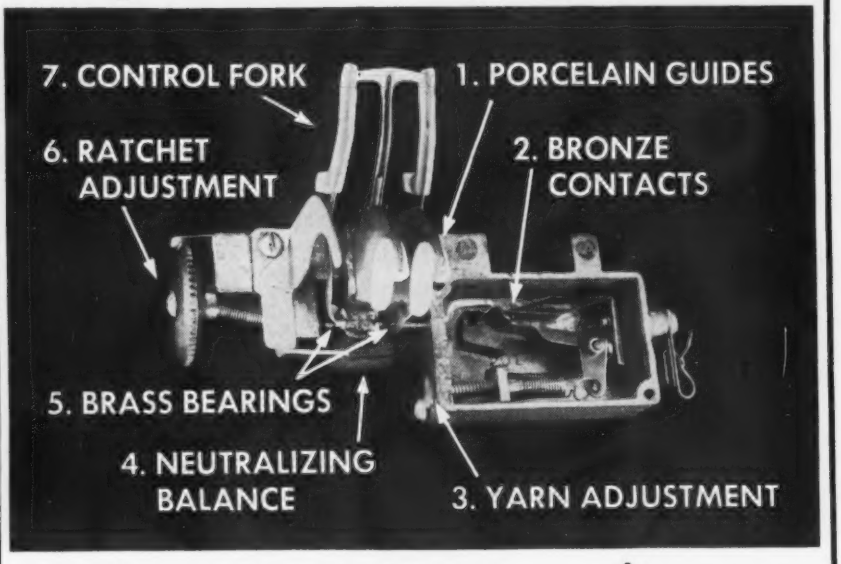

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Battery Filling

(*Continued from page 137*)

magazine, the filling ends are taken from under the spring. If the tray is intended to be set up on cells 1 or 3, the ends are held in the back of the tray. For cells 2 or 4, they are held in the front. Then the tray is inserted into the openings of the magazine, the filling ends are pulled through the openings of the outside frame, and the tray is clamped onto the frames as shown in Fig. 3.

The pulling of the clamps presses the tray against the opening of the bobbin slides and also the lever, *L*, against the catch, thus turning open the locking device. This opening permits the bobbins to fall into the slides and to fill the magazine. Then the filling ends are led through the filling holder on the loom, and the operation is completed.

Through the use of the hook, *H*, the ends are kept inside the tray; and the filling ends will be in the right position when the bobbins leave the tray. This is essential, for otherwise the ends would break during the transfer. After each transfer, the bobbins in the tray and in the magazine proper will drop a distance equal to the width of one bobbin. This brings one more bobbin out of the tray, and the filling will be in the same position as that of a bobbin put into the slide by hand.

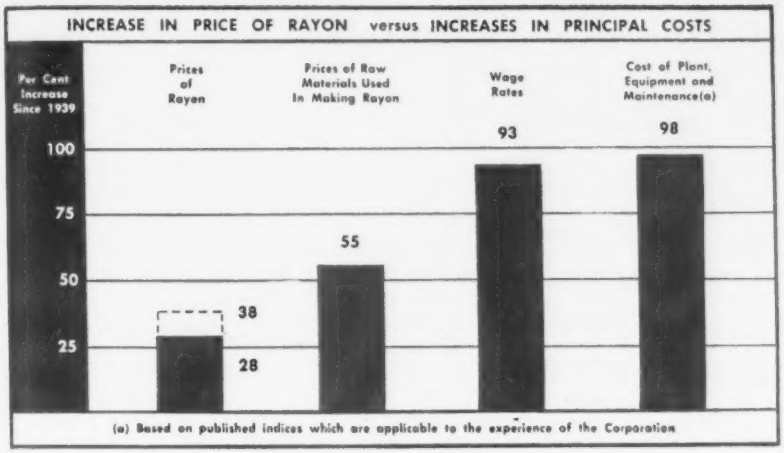
REPLACING TRAYS. During regular working, the empty trays can be replaced any time from the moment when there are eight bobbins left in a cell which can hold a total of ten bobbins. With the cell filled up, however, there would be no room for the locking device to open. With eight bobbins left, sufficient space is provided for this purpose; and there is ample time for the battery hand to take off the empty tray and to set up the new one. The exchanging of trays takes a fraction of a minute only, and consequently a battery hand may not be needed at all when very fine filling is used, if the weaver has time to change the trays.

Due to the vibration of the loom, it may be necessary to clamp the trays somewhere near the top on the loom side. If they are filled with 24 bobbins and another ten bobbins are in the magazine, there will be 34 bobbins piled up one on top of the other. Assuming the weight of one filled bobbin to be about 3 oz., the total weight on the cradles will be around 7 lb. This may be too much for their proper working, and in this case a different locking device for the trays may become necessary.

Rayon Reports

Issued Monthly by American Viscose Corporation, New York, N. Y. May, 1948

Price of Rayon Held Down In Spite of Increased Production Costs



A chart from the American Viscose Annual Report showing how the Corporation has held down the prices of rayon yarn, staple and tow in spite of the spurt in production costs. Dotted line shows January price increase.

The 1947 Annual Report of American Viscose shows how efficient operation is holding down the price of rayon yarn, staple and tow despite soaring costs of production. Prices on AVC products have had to be raised somewhat, but these increases have been only half as great, percentagewise, as the increase in raw material prices and less than a third as great as wage increases.

Construction costs have gone up even more, making current replacement of Avisco plants twice as expensive as the original buildings. Nevertheless American Viscose stepped up its output 16 per cent in pounds last year to help meet the increased requirements of its customers.

Increased production in 1947 was achieved by additions to existing plants and by modernizing their equipment. The cost of this expansion was seven million dollars more than net earnings or a total of $25,762,000. Avisco expects to spend about as much in 1948 and succeeding years to replace much of its old manufacturing equipment and provide increased production to the extent deemed prudent in view of prevailing high construction costs.

The construction of entirely new plants has been deferred because of these high costs, to enable American Viscose to keep the price of rayon as low as possible. It is hoped that any future change in the price of Avisco products can be downward in line with the Corporation's policy of making better products, at lower prices, for more people.

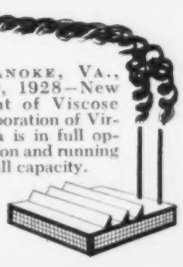
Selling Practices in Stores Studied as Basis for Sales Training Program

American Viscose Corporation has just completed, in cooperation with New York University, a survey of selling practices in 200 departments in retail stores. This information is being tabulated and the analysis will be distributed shortly to retail stores.

RAYON 20 YEARS AGO

NEW YORK, May, 1928—Men's rayon underwear is beginning to make an impression on retail trade.

ENGLAND, May, 1928—General discouragement felt by British industry over attempts to persuade the public to use the term "rayon" in place of "artificial silk."



ROANOKE, VA., May, 1928—New Plant of Viscose Corporation of Virginia is in full operation and running at full capacity.

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To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

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Operated at a Speed of *1000* RPM

DESIGNED for general mill use, today's pace-setter in textile extraction is Tolhurst's 48" Suprex Extractor. On most fabrics it reduces extraction time by as much as 40% to 50%. Lightning-fast extraction with the Suprex is possible because — operating at 1000 RPM — it develops nearly *twice as much* centrifugal force as other machines of the same size. Safe, efficient operation even with unbalanced loads. Basket construction is stainless steel on all parts that come in contact with the work. Tolhurst's Suprex is especially suited for use with cotton raw stock and other fabrics requiring speedy production at low cost. Write for 20-page illustrated catalog and prices on the Suprex and other Tolhurst textile extractors.

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Makes operation automatic from the time "start" button is pushed until pre-set period has elapsed and the brake stops the finished load. Timer can be set for any period from one to sixty minutes. Standard equipment, without extra charge, on all Tolhurst 48" Suprex Extractors.

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Builder Motion

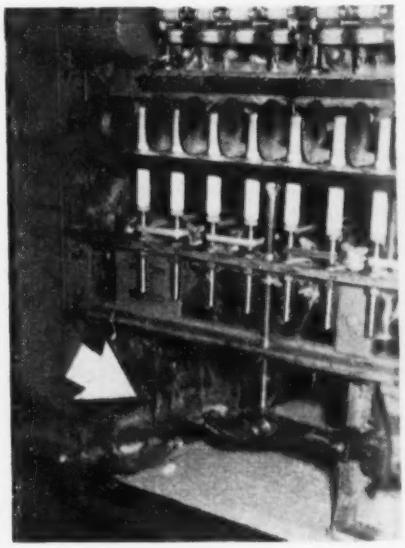
(*Continued from page 125*)

in Fig. 2 is such that the resulting taper will be unequal. The horizontal center is too high; and the greater length of the traverse extends below the horizontal center. In the picking action, the majority of the picks will favor the greater length in proportion to its distance from the horizontal center. The effect is unequal taper at the top and bottom of the bobbin. In some builders, which have a fulcrum that is in a fixed position, the adjustment to correct such builds may be made by raising or lowering the Pitman-roll stand.

In Fig. 2, therefore, the horizontal center must be lowered. The correction is obtained by dropping the Pitman-roll stand. This brings the builder arm up, automatically letting out the chain to the quadrant and raising the traverse on the bobbin. The bobbin should be rested by taking up on the chain so that the start is normal and not too high on the bobbin. These adjustments outlined change the horizontal center and the position of the traverse upon the bobbin. They do not change the length of the traverse.

The correction of Fig. 2 is shown graphically in Fig. 4.

When the Pitman-roll stand was brought down the builder arm came up, as illustrated by the dotted lines. The swing of the builder extended further above the horizontal center. The let-out on the chain, as the builder arm came up, forced the traverse higher on the bobbin, but the traverse remains the same length. The take-up on the chain lowers the traverse to



Builder motion controls taper on bobbin of spinning frame. Arrow points to builder.

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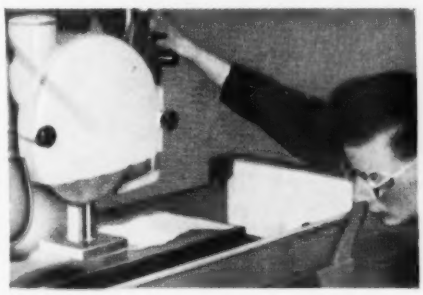

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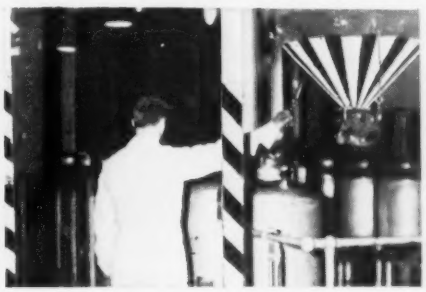

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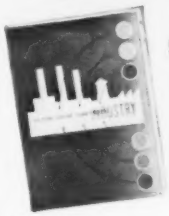

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normal starting position as illustrated in Fig. 1. The position of the builder in its stroke above and below the horizontal center is the only operation that is actually changed, and it remains in this relationship when the traverse is lowered to normal starting position as indicated by solid black lines in Fig. 4.

In Fig. 3, the stroke above the horizontal center is too long and too short below. The greater proportion of the picking action favors the longer stroke above the horizontal center causing extra long taper on the top and unusually short taper on the bottom. To correct, the exact reverse of the correction in Fig. 4 is required.

The Pitman roll is raised, forcing the builder farther away from the horizontal center and increasing the stroke beyond it. The chain is automatically taken up in this operation and must be let out to bring the traverse back to normal starting position. Fig. 5 shows the correction for Fig. 3.

CHECK THE QUADRANT. The lower the quadrant is set, the longer the rocking motion on the rockers. The higher the quadrant is set, the shorter the rocking motion on the rockers. The rockers are the cross-rods that support the weights. However, when limitation of chain is reached better results are achieved by adding or taking out links to restore normal starting position. The traverse remains constant.

For warp wind on Whitin builders, it has been found that the builder set, shown in Fig. 6, is most desirable. This is also true of Saco-Lowell builders.

The slightly longer taper at the top helps prevent shelling when handling. Because of the angle of taper, the yarn winds and binds in closer without the tendency to roll; and there are not too many layers on each preceding shoulder. The top taper should be between 1⅜ and 1½ in. and the bottom taper between 1¼ and 1¾ in.

ADJUSTED SACO-LOWELL BUILDER. The Saco-Lowell builders function almost identically to the Whitin builders. The relationship of builder to bobbin, the winding in or out of the rack on the builder arm, the set of the main pivotal point, the fulcrum, have close resemblances. The adjustment of these builders varies, but the principle remains the same.

The fulcrum point of the Saco-Lowell builder rests on a cross-arm extending into the gear-head of the frame and is usually supported by an additional cross-arm extending the width of the frame. On the older type builders, the Pitman roll slides forward or backward, not up and down as the

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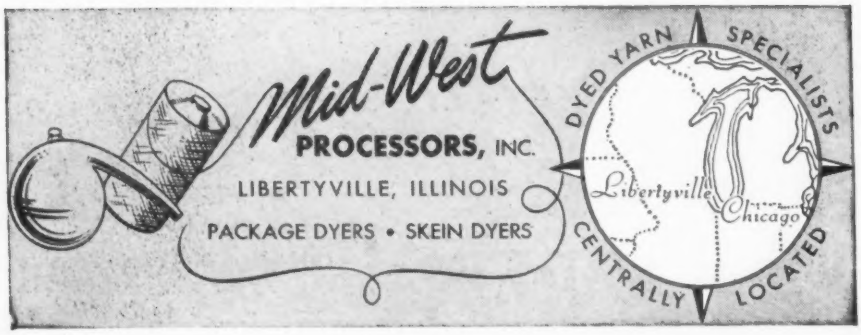

Whitin, yet functioning almost identically. The set-up of the traverse and the gaging of the taper length are as already described.

Again, assume that two warp winds have been built and, for the purpose of correction, that they have been built wrongly.

In Fig. 7 is shown unequal taper—too short at the top and too long at the bottom. Equal taper is desired with equal traverse above and below the horizontal center. Point A in Fig. 7 represents the fulcrum which rests on a grooved slide on the cross-arm extending into the gear-head of frame. This arrangement allows the fulcrum point of builder to slide up or down. It is necessary to bring the builder down from the fulcrum point. As this is brought down the chain is let out, bringing the traverse relatively above normal starting position, as shown in Fig. 8. The dotted lines represent the position taken by the builder in relation to the bobbin when fulcrum is lowered.

This is merely a theoretical position to show the relationship of the horizontal center to the center of traverse as illustrated between top and bottom taper of the dotted lines. The actual position when traverse is brought back to normal starting position is indicated by solid black lines. Again, it is emphasized, that the length of traverse did not change, only the position of the builder and fulcrum in relation to the bobbin.

The opposite is true for Fig. 9. However, if the limit of fulcrum on the slide has been reached and the desired taper has not been achieved, the Pitman rolls may be adjusted to throw builder arm up or down. To return to Fig. 7, assume that the fulcrum, A, cannot be lowered any more. To get the desired equal taper, the Pitman roll is loosened and brought toward the fulcrum on its slide arm. This action brings the builder arm upward toward the horizontal center. The traverse will extend upward as the chain is let out by this action. The correction is shown graphically in Fig. 10.

The chain is taken up and the traverse brought back to normal starting position. The stroke above and below horizontal center remains equal. In the part of Fig. 10 where the numerals 1 and 2 appear, number 1 represents the former position of the Pitman roll, and number 2 represents position of Pitman roll after it was moved toward the fulcrum. The exactly opposite procedure is followed in correcting Fig. 9. The picking action and the lay gear control length of taper on the Saco-Lowell builder, though the type of worm will determine to a large extent the number of picks to use.

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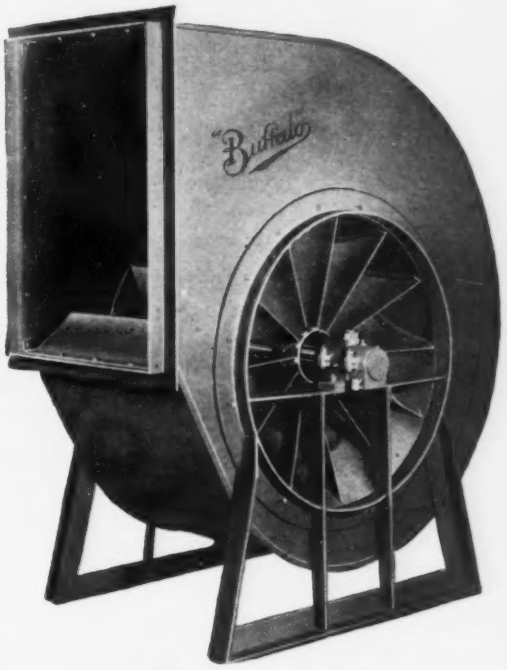

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Textile Equipment News

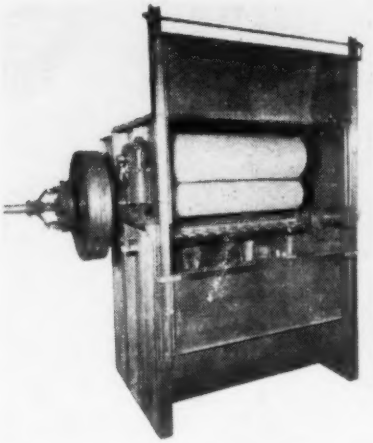
(*Continued from page 152*)

covered. The pit roll revolves in Graphaloy bearings. All other revolving parts are mounted in self-aligning ball bearings on the flange of the tank and are supported through vertical stainless-steel box-type channels on the side of the tank from the bottom flange.

All other rotating parts are mounted on stainless-steel box channels which are an integral part of the tank itself.

Some of the features of the totally inclosed tight-rope washer are: double-action, free-sliding doors with no counterweights, pin rails with readily adjustable pins, stainless-steel pot eyes, and individually compensated motor drive or clutch pulley as required. A compensator is attached to synchronize speeds in range work.

The machine is offered with or without attached pneumatic squeezer supplied with a Foxboro control panel adjustable from maximum to zero pressure. If desired, a mechanical set may be substituted.



***Box channels** on the tank sides of this tight-strand washer are said to lend strength.*

Cloth Inspection Fixture Uses Fluorescent Lights

A fluorescent cloth-inspection fixture which makes inspection quicker, more accurate, and easier has been developed by Salem Mfg. Co., 4 W. Jefferson Ave., Salem, Mass.

The fixture consists of a strong, durable cabinet into which, behind a diffusing panel of ceramic translucent glass, are set eight 40-watt fluorescent lamps. The lamps are said to give ample and cool light of daylight quality to permit careful, comfortable inspection of cloth and to allow easy location of defects.

The translucent glass has such excellent diffusing characteristics that

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Photo Courtesy Liberty Throwing Company

NOPCO* 1111

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The rayon industry—one of the *most modern* of industries — turns naturally to *modern* machines, *modern* methods and *modern* processing materials to help increase volume, enhance quality and lower production costs — turns also to NOPCO 1111, acknowledged Standard of the Industry. Why?

Because today NOPCO 1111 means—as it has meant for more than a quarter of a century—many unique advantages for the Rayon Throwsters and Weavers throughout the world.

IT MEANS . . . unsurpassed softness and lubricity, higher winding efficiency, reduced ends down, fewer knots in yarn, more nearly perfect finished goods . . . controlled pebble . . . easy removal during boil-off . . . no volatilization in drying . . . complete freedom from oxidation and rancidity . . . plus other advantages that make NOPCO 1111—*now as always*—the premier product of its kind.

Read the two booklets widely accepted by the Rayon Industry for basic facts—"Important Points Regarding Rayon Warp Sizing" and "NOPCO 1111—Soaking Oil for Rayon Crepe Yarns". These valuable NOPCO booklets are available upon request.

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Un-retouched photo showing result of one of many wear tests. Lunkenheimer—Fig. 73 "Renewo" Globe Valve test stopped at 305,000 cycles (open and close). Stem still working well although partially worn.

Fig. 73 "Renewo" Globe Valve. All Lunkenheimer bronze stems, from the smallest to the largest, are made of patented wear-resistant alloy.

- For many years, stem-thread wear was a major source of valve failures. Corrosion and especially dezincification, also frequently caused failures. With traditional resourcefulness, LUNKENHEIMER research developed two new stem alloys (Symbols RSB and Alloy 6) which completely revolutionized all prior conceptions of stem serviceability (patent granted).
- Before submitting this revolutionary development to the trade, laboratory tests of valves under severe operating conditions were conducted with these and many other possible materials. In every test, LUNKENHEIMER alloy stems outlasted others by wide margins.
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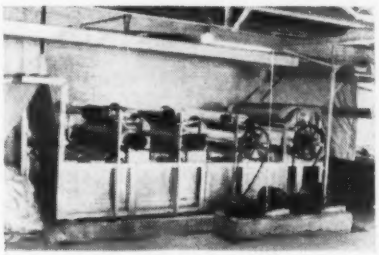

A new continuous crabbing machine is complete roller- and ball-bearing equipped.

A new four-bowl continuous crabbing machine has been developed by Arlington Machine Works, Arlington 74, Mass.

The new machine has heavy-gage stainless-steel tanks (one three-compartment and one single-compartment) with combination overflows and drains and stainless-steel tank rolls. All castings are made of an AMW metal (manganese bronze) which is rustproof and acid-resisting. Adjustable ball-bearing spirals are used before the squeeze rolls which consist of three pairs of 12-in. diameter

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Hooker Products List, Bulletin 100, contains chemical and physical characteristics, uses and shipping information on nearly 100 Hooker Chemicals, many of them for the textile and dye industries. Send for a copy.

PRODUCT *Chemical Formula; Molecular Weight*	HOOKER SPECIFICATIONS	SUGGESTED USES
Antimony Trichloride Anhydrous $SbCl_3$; 288.1	Antimony Trichloride..... 99% Min. Iron and Arsenic..... 1% Max. Lead..... 0%	Catalyst in organic synthesis; mordant in textile printing. Moisture and fireproofing textiles.
Benzal Chloride $C_6H_5CHCl_2$; 161.0	Clear, yellow liquid. Boiling Range..... 200 to 235°C Specific Gravity 15.5°/15.5°C..... 1.279±.005	Dyestuff intermediate.
Chloranisidine $NH_2C_6H_3ClOCH_3$; 157.5	Gray crystalline solid. Melting Point..... 79°C Min. Diazo Test..... Relatively clear.	Dyestuff intermediate.
Lauryl Pyridinium Chloride $C_5H_5N(C_{12.6}H_{26.2})Cl$; 292.0	Mottled tan, semi-solid. Solubility in water is 60 gms. per 100 gms. of water. Alkyl Pyridinium Chloride (Calc. as C_{12}) ..... 85.0% Min.	Cationic detergent. Wetting and cleaning agent for textile fibers. As a leveling agent and color modifier in dyeing.
Monochlorbenzene C_6H_5Cl; 112.5	Clear, colorless liquid. Distillation Range..... 131.3 to 132.3°C	Dyestuff intermediate, preparation of sulfur black, brown dyes. Solvent.
Orthodichlorbenzene, Tech. $C_6H_4Cl_2$; 147	Clear, colorless liquid. Freezing Point..... −10° to −22°C Boiling Range..... 6° including 179°C	Manufacture of pyrocatechin, dye intermediates, other synthetic organic chemicals. Degreasing wool.
Phosgene (Carbonyl Chloride) $COCl_2$; 98.9	Colorless gas at ordinary temperatures. Does not discolor a 0.2% solution of KI when vigorously bubbled through it for one half hour. (Test for free chlorine)	Dye intermediate; chlorinating agent.
Sodium Sulfhydrate NaSH; 56.1	NaSH..... 70 to 72% Na_2S..... .25 to 2.5% Fe..... 5 ppm Max. NaCl..... .4 to .8% Na_2So_3 and $NaHCO_3$..... .04 to .4% Cu, Ni, Cr, Mn, Pb..... 1 ppm Max. Water of crystallization..... 28 to 26%	Desulfurizing rayon; calico printing; in sulfur dye baths.
Sodium Sulfide Na_2S; 78.1	Na_2S..... 60 to 62% Fe..... 8 ppm Max. NaCl..... 1.5% Max. Other Na Salts..... 2.0% Max. Cu, Ni, Cr, Mn, Pb..... 1 ppm Max. Water of crystallization..... 36.5 to 34.5%	Desulfurizing rayon; calico printing; in sulfur dye baths.

HOOKER ELECTROCHEMICAL COMPANY

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New York, N.Y. Wilmington, Calif. Tacoma, Wash.

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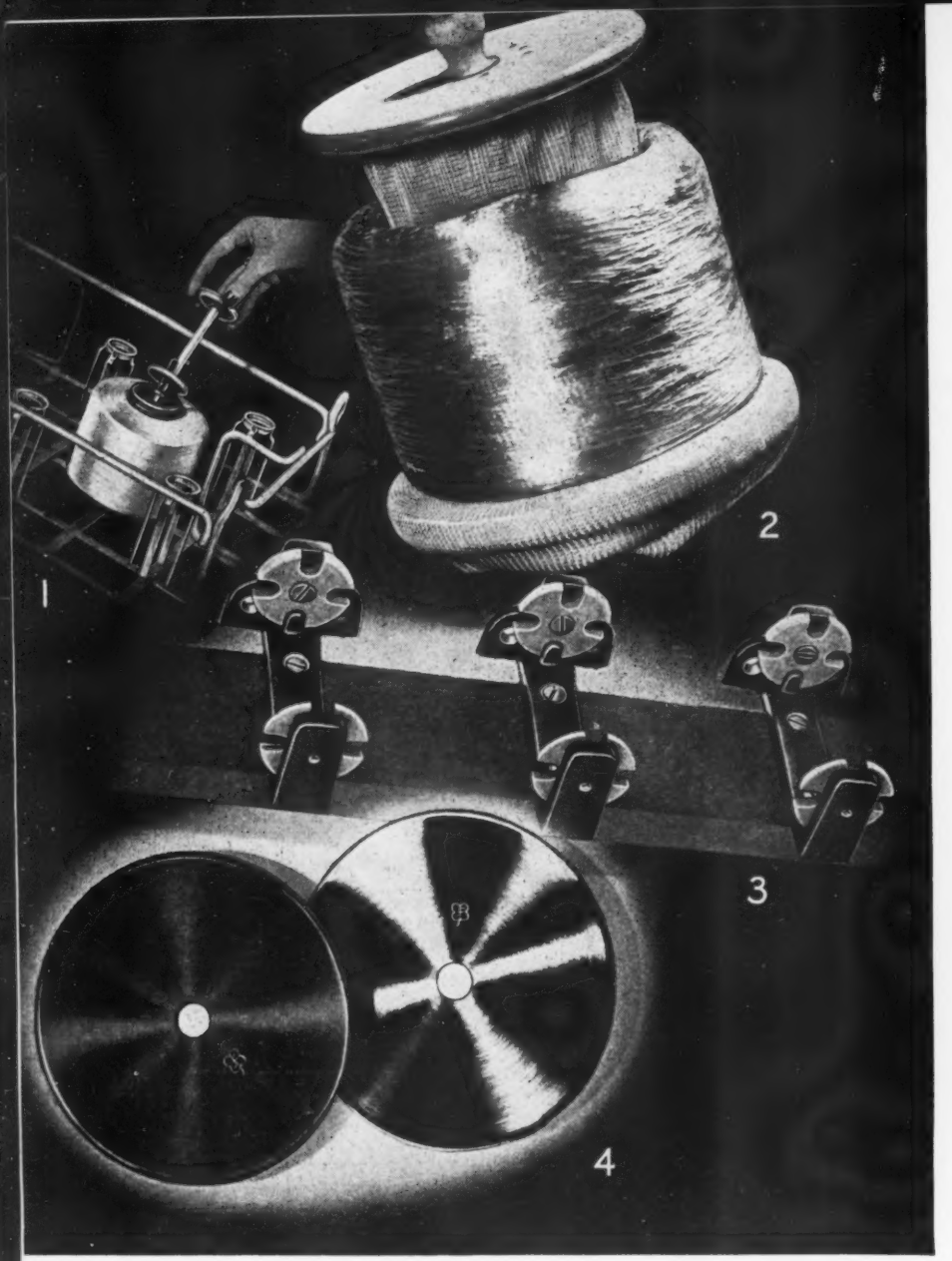


Here at Bobbin headquarters, Cloverleaf-Freeland engineers are constantly at work developing specialty items like these:

(1) Headless Package — with patented self-positioning arbor and releasing shellboard, operator's hands never touch nor soil yarn.

(2) Cake Yarn Holder — designed to meet all mill requirements. Fits any standard acetate or rayon cone holder.

(3) Redraw Brackets — for side, top or installation parallel to machine rail. Reduces vibration and friction to a minimum, speeding up production and increasing life of Bobbin.

(4) Reel Caps—stainless steel, bakelite or fibre.

Whatever your problem may be in the throwing of rayon, silk or Nylon yarns, you can depend on Cloverleaf-Freeland service to meet your requirements.

CLOVERLEAF-FREELAND CORP.
Honesdale, Pa. Hazleton, Pa.
Southern Rep.: James T. Gordon, 1013 Woodside Building, Greenville, S. C.
New England Rep.: R. F. Makepeace, 9 Rhode Island Ave., Warwick Neck, R. I.

CLOVERLEAF-Freeland BOBBINS

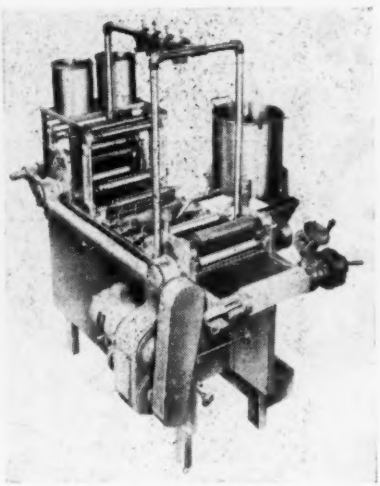
rubber-covered rolls, and one pair of 16-in. diameter heavy-duty squeeze rolls. Semi-squeeze rolls are equipped with a top-roll lift-off device. Foxboro pneumatic loading is used on the heavy squeeze for uniform pressure.

The unit is equipped with tension rails and an adjustable tension device at the entering end with a folding attachment at the delivery end.

The complete crab is 90% non-ferrous construction and is completely roller- and ball-bearing equipped. The drive consists of two vari-speed roller-chain units which allow for a full range of speed and synchronization.

The machine can be furnished with as many compartments as needed, and delivery at this time is said by the manufacturer to be "very attractive."

Laboratory Williams Unit and Pad Offered



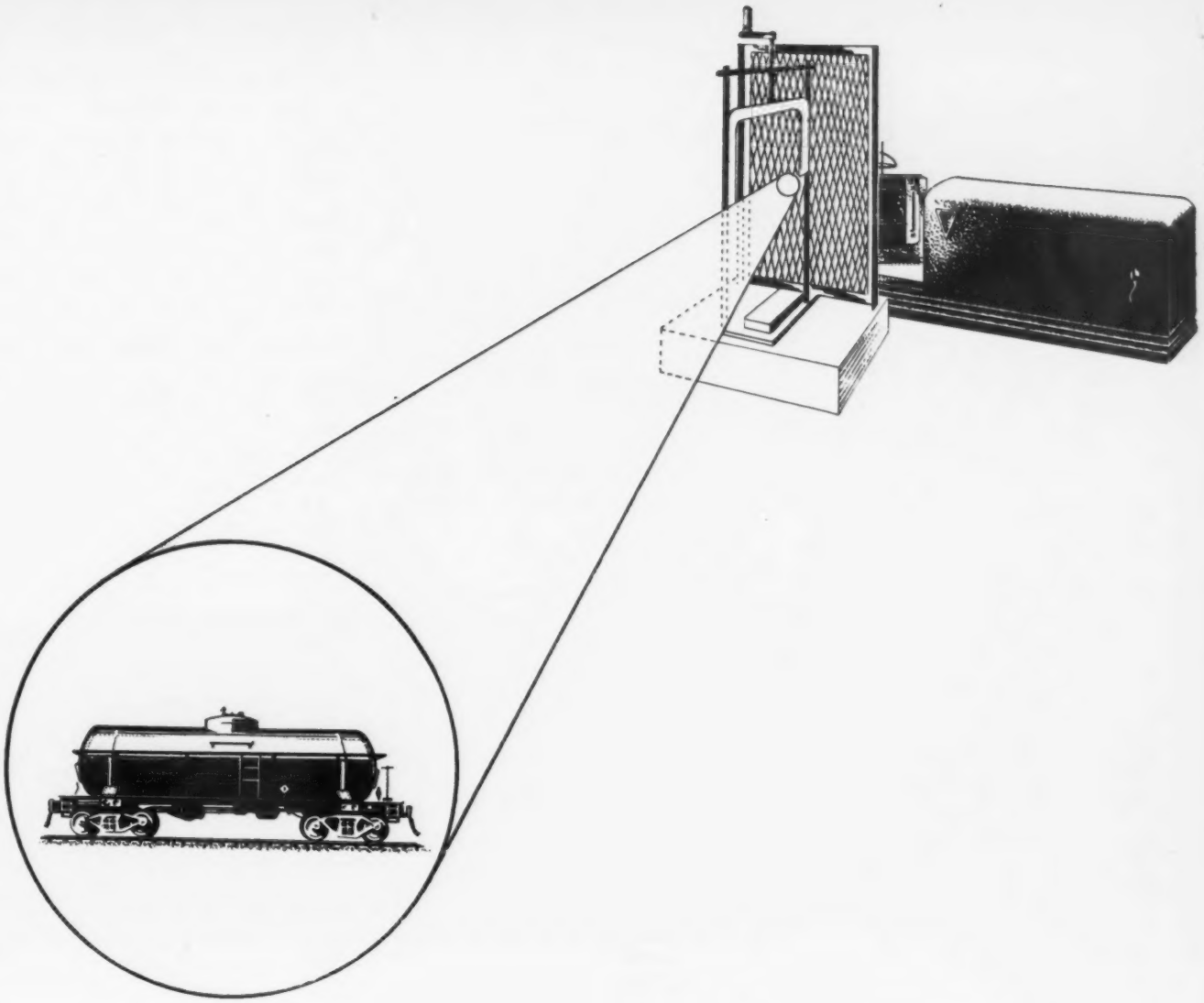
Savings in production time of full-size machines can be saved by use of this laboratory-size Williams unit and Microset padder.

A new combination laboratory 3-roll Microset padder and Williams unit with 2-roll Microset nip has been announced by Morrison Machine Co., 1171 Madison Ave., Paterson 3, N. J. Suited for research and development work, it also offers a wide range of practical applications.

The new machine contains a Williams unit which is only about one third the size of the standard unit.

The laboratory unit, having 12-in. face rolls, may be used for dyeing of all classes of dyestuffs on all forms of textile materials up to 10 in. in width. Other practical applications include the dyeing of yarn in warp form, the dyeing of narrow fabrics such as ribbons and tapes. The machine is also suitable for use in connection with desizing operations.

According to the inventor, S. H. Williams, the reproduction of shades



do your requirements call for a better grade caustic soda?

If pure, uniform caustic soda is a desirable factor in your production plans, it will pay you to get acquainted with Wyandotte Caustic Soda.

Produced by the Mercury Cell method, this exceptionally high-grade chemical is ready for use, as prepared, without further processing. That's an important advantage! Its purity and uniformity are not dependent upon the efficiency of a purification system.

Within a very short time, we expect to complete facilities which will almost double our present production of Mercury Cell Caustic.

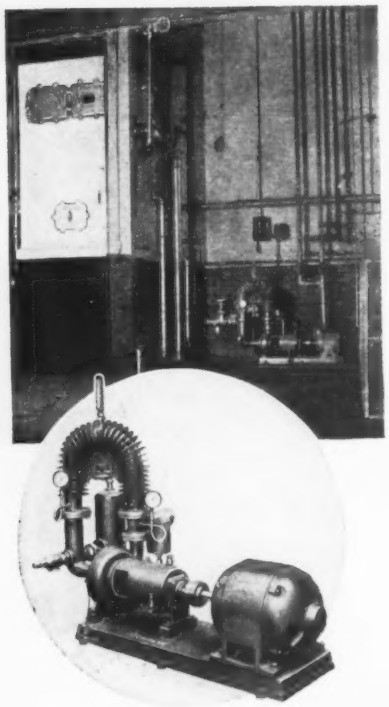
If your particular requirements include quality caustic soda, or any of the chemicals listed below, why not ask Wyandotte?

WYANDOTTE CHEMICALS CORPORATION
WYANDOTTE, MICHIGAN • OFFICES IN PRINCIPAL CITIES

Soda Ash • Caustic Soda • Bicarbonate of Soda • Calcium Carbonate • Calcium Chloride • Chlorine • Hydrogen • Dry Ice • Glycols
Ethylene Dichloride • Propylene Dichloride • Chloroethers • Aromatic Sulfonic Acid Derivatives • Other Organic and Inorganic Chemicals

Wyandotte
REG. U. S. PAT. OFF.

A 20% SAVING *from* WASTE HEAT UNITS



Reading Dyeing Co., Inc. Find C-B System Saves Drying Time

Everybody wants to save money! But when savings result from the utilization of otherwise wasted material . . . plant operators become enthusiastic.

That's the way the Reading Dyeing Company feels about their Cochrane C-B system — *enthusiastic!* Why? Simply because it puts waste heat units to work.

For instance, in this "closed circuit" system of condensate return no heat is lost in the flashing of steam to atmospheric pressure. Instead, it is put to work in the dryers . . . saves 20% drying time. And that isn't all . . .

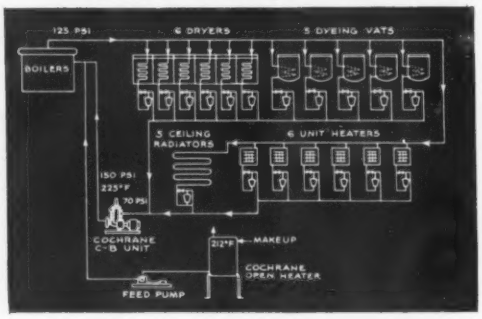
Since no condensate is lost in flashing, treatment of makeup water is materially reduced. Fuel costs go down, too, because water is returned to the boilers at 225°F. In fact, one of the boilers in the plant has been cut out and is now used only for standby purposes.

This enthusiasm of the Reading Dyeing Company for this C-B unit is merited, indeed—and it isn't unusual, either. Plant operators all over the country are finding Cochrane C-B Condensate Return Systems the answer to their problem of putting steam to work efficiently.

For complete details send for Publication #3250 today.

COCHRANE CORPORATION
3116 N. 17th St., Phila. 32, Pa.

The Reading Dyeing Company, Inc., operates two 250 HP boilers which supply steam at 125 psi for dye vats, drying and for plant heating in two different buildings. The diagram shows how the steam is returned from the various utilization points to the boilers through the Cochrane C-B high pressure condensate return system.



COCHRANE CONDENSATE C-B BOOSTER SYSTEM
OF HIGH PRESSURE, HIGH TEMPERATURE CONDENSATE RETURN

COCHRANE CORPORATION 85 YEARS OF SERVICE 1863-1948

and effects with this equipment will duplicate very closely practical mill results obtained on larger machines.

When used for research work, this machine provides a means of investigating methods and procedures correlated to plant application. Use of this new equipment eliminates tying up of productive plant equipment, and saves many production hours in the investigation of dye formulas and the dyeability of various constructions.

Seaming Nylon

(*Continued from page* 133)

characteristics of the yarn itself increases the rolling tendency.

The seamer should be careful to put sufficient tension on the stocking between her hand and the uncurler to prevent it from wrinkling.

SEAMING THREAD. Another source of damaged stockings at the seaming operation is the use of too many ends of thread. In order to keep the selvage of the knitted fabric from throwing out along the seam, many mills run three ends of thread in the seamers.

Stockings made of 10 or 15-den. yarn show the seams quite prominently. It is desirable, therefore, to use as few seaming threads as possible of as fine a count as practicable. Some mills are successfully seaming fine-denier hosiery with only two ends of thread. With proper adjustments of the seaming machine, a seam made with two ends of thread will prevent the fabric from throwing out along the seam as easily as a three-thread seam.

Another advantage to the use of only two threads is the greater ease with which certain defects can be corrected. It is often necessary to take the seam out of a stocking in order to correct a mismatch or drop out. If the stocking has been seamed with three threads, it is difficult to take out the seam without damaging the fabric. In such instances, a two-thread seam can be taken out more easily and with less risk of damaging the fabric.

Picks, not caused by a bent or otherwise damaged needle point, often occur along the seam. This defect usually results from a seaming thread that is not sufficiently pliable. A small amount of lubricant applied to the end of thread that passes through the needle eye will correct this source of damage.

APPLYING LUBRICANT. A good way to apply this lubricant is illustrated in Fig. 2. Mount a small glass jar of ½- to 1-pt. capacity as shown in the photograph. Use only clear, stainless oil in the jar. Place a felt wick through a

it all depends on your point of view

When our customers think of STEIN-HALL some see laboratory smocks, microscopes and rubber gloves...and some see pin-stripe suits, brief cases and order pads.

The astigmatism needn't be corrected though, for STEIN-HALL actually is all of them ...and at the same time.

In our 82-year-old TEXTILE SALES DEPARTMENT... the laboratory equipment is responsible for studying, testing and improving our products... the salesman garb for telling *you* about them.

For 82 years now, we've been in perfect focus... which is why the name STEIN-HALL is among the most honored in the world.

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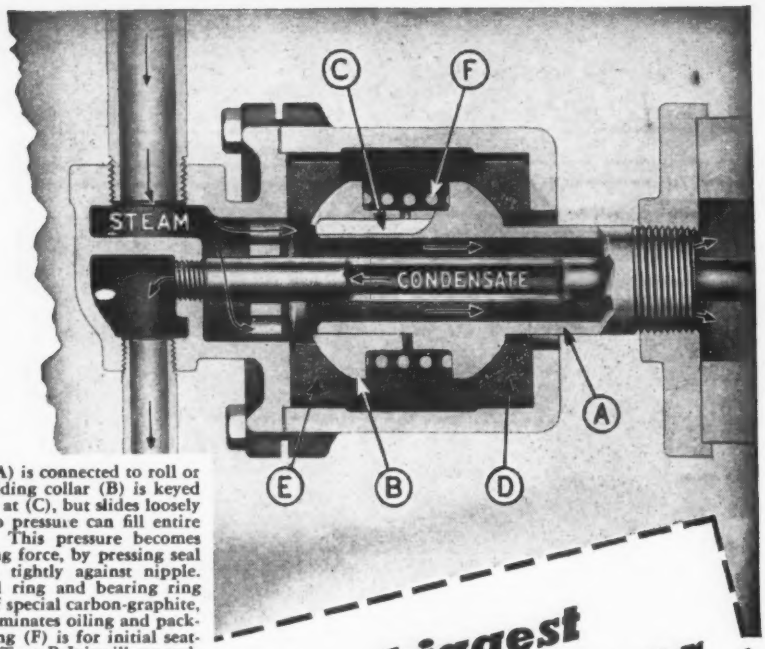
285 MADISON AVENUE, NEW YORK 17, N. Y.



Nipple (A) is connected to roll or drum. Sliding collar (B) is keyed to nipple at (C), but slides loosely over it so pressure can fill entire housing. This pressure becomes the sealing force, by pressing seal ring (D) tightly against nipple. Both seal ring and bearing ring (E) are of special carbon-graphite, which eliminates oiling and packing. Spring (F) is for initial seating only. Type B Joint illustrated; other types, sizes for all needs.

...it's the biggest little trouble-saver in the mill...

In terms of physical size alone, the Johnson Joint could hardly be called big machinery. But in its ability to save time and trouble, and promote plant efficiency, its stature approaches anything the industry has ever seen.

The Johnson Joint was designed to go after the old stuffing box and steam fit troubles in a business-like way, and it literally knocks the stuffing out of them. There's no packing of any kind. There's no oiling required, ever. There's no adjusting — the higher the pressure, the tighter the seal. There's little to fear from misalignment—with provision for both lateral and angular movement built right in. Note besides how neatly it provides for more efficient syphon drainage, through the same head that admits the steam.

In dollars and cents, what does all this add up to? Well . . . enough at least to pay the cost of switching over to Johnson Joints in just a short while. Enough certainly to make the Johnson Joint too big to overlook.

Write for literature and the name of your nearby Johnson representative.

JOHNSON
Rotary Pressure
JOINTS

THE JOHNSON CORPORATION
814 WOOD STREET
THREE RIVERS, MICHIGAN

hole in the lid so that the upper end of the wick is located in such a position that the seaming thread will pull over it. The other end of the felt wick should be well submerged in the lubricant.

Oil from the felt will soften the seaming thread and make it pull closer to the needle. The bulk of the stitch will be lessened, eliminating the picks not caused by a damaged needle. Lubricating the thread in this way does not affect the tension on the thread.

The manner in which the machine is mounted on the table also has an influence on the production of the seamer. Experience has shown that a seamer can work faster if the uncurler is out a little so that the seamer can sit square with the table without having to reach around the front of the machine to feed the stocking to the uncurler.

The Union Special machine is built so that the uncurler is in the best operating position. It can be mounted flat on the table and straight with the edge.

The best working position of the uncurler can be obtained on the Singer seaming machine by mounting the machine flat on the table and turning it 20° to the left.

The maximum speed of 4500 r.p.m. can be used with either machine. It is good practice to seam 10-den. hose with 18 stitches per in. and 15-den. hose with 16 stitches per in.

Pouring Bearings

(*Continued from page 135*)

that is, the observance of the basic principles of heat transfer from the molten metal outward through the bearing shell. These principles apply regardless of the particular set-up and are largely responsible for the production of sound bearings tightly seated within the shell.

PURE METAL. It is recommended that a babbitt be selected that is made of virgin metals. Avoid mixing the pure babbitt with reclaimed metal. It is generally poor economy to try to salvage used babbitt by adding new metal to produce the quantity desired, since lint, dirt, or other harmful matter may also be included, or a difference in analysis may result in the bearing not having the dense, close-grained structure that is needed to resist wear. Many textile mills, unwilling to discard old, used babbitt, arrange to accumulate it and use the reclaimed metal to pour less important bearings that are not called upon to withstand heavy loads or high speeds.

The equipment and fixtures and the

Flameproofed

. . . with finish and "hand" unchanged

DU PONT FIRE RETARDANTS

BRUSHED RAYON

MARQUISETTE

VELOURS

These 6 advantages help you get BETTER FLAMEPROOFED FABRICS

1. Fabric keeps original "hand"—Du Pont Fire Retardants do not stiffen, or in any way affect, the "hand" of fabrics. Yet, they effectively flameproof most materials . . . cotton, viscose rayon and many others.

2. No "blooming"—Du Pont Fire Retardants do not effloresce to the surface of fabric . . . even after aging under adverse conditions.

3. Easy to apply—Uniformly applied by immersion or spray treatment.

4. Not removed by ordinary dry cleaning solvents.

5. No afterglow—Fabrics flameproofed with Du Pont Fire Retardants are only charred when subjected to flame . . . no blazing or afterglow will result.

6. Low-cost—yet, give added sales value to your finished fabrics.

For further information on how Du Pont Fire Retardants can help you make better flameproofed fabrics, write the Du Pont Company, Grasselli Chemicals Department, Wilmington 98, Delaware.

DU PONT
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BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

E. I. DU PONT DE NEMOURS & CO. (INC.), GRASSELLI CHEMICALS DEPARTMENT
Wilmington 98, Delaware

IT'S THE PIVOT THAT COUNTS!

ROCKWOOD PIVOTED MOTOR BASE

Automatically Maintains Correct Tension ALL the Time

Production rises, quality improves, and costs go down when Rockwood Pivoted Motor Bases are installed for short-center drives of spinning and twisting frames. That's the experience of mill after mill with over 300,000 Rockwood drives in constant use today. They automatically maintain just the right amount of pull . . . just the right speed . . . regardless of belt-stretch or load-changes. You can count on Rockwood for these important advantages:

CUTS OPERATING COSTS—Eliminates belt slippage, usually doubles belt-life, saves 5 to 10% in power, reduces bearing wear to a minimum!

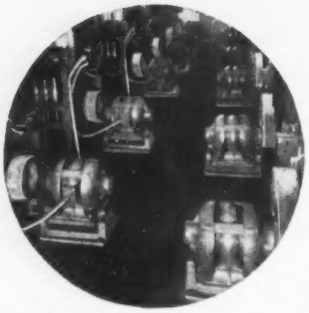
UPS PRODUCTION—Operates continually up-to-speed . . . no slow-downs or time-outs for adjustments!

BOOSTS QUALITY—Maintains constant driven-machine speed at all times.

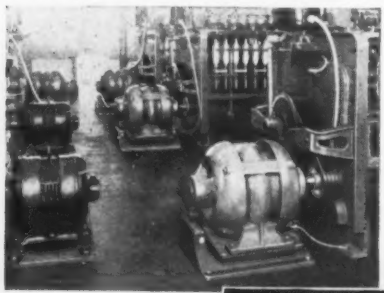
REDUCES MAINTENANCE—Holds correct tension with practically no attention. No adjustment needed . . . motor-bearing overhauls practically unnecessary.

Installation is quick and easy in your mill. Write us for further details or call your Rockwood distributor today. Enjoy the improvements in driven machine performance, output, and profit which can be yours with Rockwood!

ROCKWOOD MANUFACTURING COMPANY
Indianapolis, Indiana



● These Rockwood Pivoted Motor Drives are of the floor-type. Installation above is in The Harriet Cotton Mills at Henderson, N.C., while that below at South Fork Manufacturing Company's mill at Belmont, N.C. Bases are also available in shelf-type, fastening to the frame-end.



AVAILABLE *with Flat or V-Belt Drive*

● Rockwood's expanded manufacturing facilities now assure delivery immediately, or according to any delivery schedule you determine.

ROCKWOOD PIVOTED MOTOR DRIVE

inside of the shell should be cleaned thoroughly. A wire brush is generally employed for this purpose. It is also recommended that after brushing, the inside surface of the shell be gone over with a blow torch. In addition to further cleaning, the blow torch also dries all moisture out of the bearing shell—an important factor in securing a good, tight seat.

If a hollow mandrel is used, it should be thin walled. Close both ends with wood plugs to prevent too-rapid heat loss. Because babbitt shrinks as the hot metal cools and solidifies, it is necessary to pour more metal than is required to fill exactly the bearing area. The extra metal is accommodated by putting a waste head on top of the shell. A putty-like substance, which does not dry out and may be used repeatedly, is available for this purpose. The waste head should be high enough to hold sufficient metal to take care of shrinkage. It is better to have too much metal than too little, which is something to remember when determining how high to make the waste head.

MELTING PROCEDURE. Determine as accurately as possible the quantity of metal required for the bearing before melting is started. In case of doubt, it is best to play safe and have an oversupply, since it is important that the complete bearing be poured at one time. Place the melting pot close to the work in order to cut to a minimum the heat loss in the ladle as the molten metal is carried from the pot to the fixture.

If the maker of the babbitt that is used has indicated the proper pouring temperature, his recommendation should be followed. A temperature of 850 to 950° F. is generally sufficient. However, it should be kept in mind that the correct pouring temperature depends to a considerable extent upon the thickness and size of the bearing being poured.

The metal should pour about like water. Heating the metal to a slight excess should not be harmful; it may accumulate more dross as a result of oxidation, but otherwise it will be unharmed. For heavy bearings, the temperature of the metal may be somewhat lower than for bearings that have a thin cross section. The point is that the metal should be hot enough, or fluid enough, to reach the bottom of the mold and build up before setting occurs. A check on the temperature can be made by inserting a dry pine stick in the pot. The stick should burst into flame as it comes in contact with the hot metal.

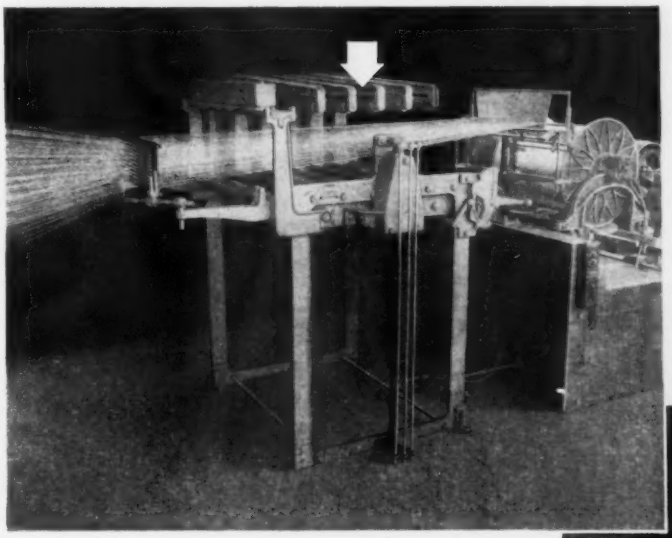
POURING AND COOLING. When the heated metal is ready, and before pour-

BROKEN ENDS NO PROBLEM

for REINER WARPING EQUIPMENT

THE REINER YARN STORAGE DEVICE

makes tying up broken ends quick and practically automatic.



Yarn Storage Device Up. Note unobstructed flow of the warp sheet.

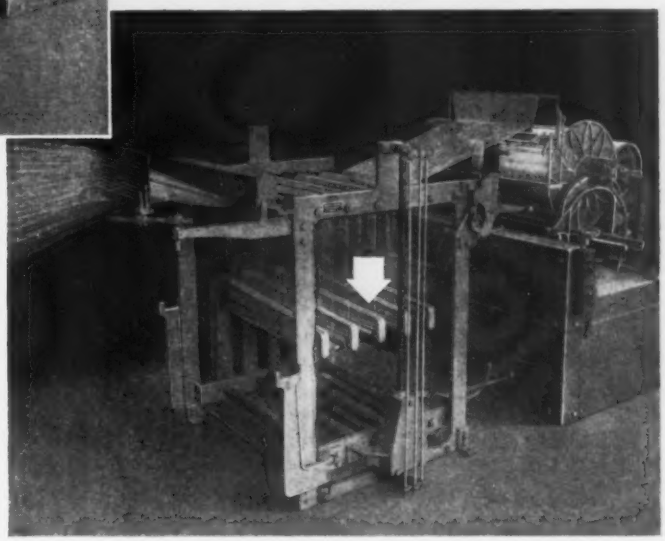
While all is well, the yarn sheet flows unobstructed through this yarn storage device.

When an end breaks, the yarn sheet is automatically clamped where it enters the storage device from the creel. Ends are prevented from crossing or rolling.

Under the warp sheet, when the yarn storage device is not in operation, are five rolls, so spaced that other rolls, set in a movable frame above the warp sheet, can pass down between them, thus folding the warp sheet up as it is rewound from the warper, until the break is reached.

When the broken end has been repaired and warping is resumed, the storage device feeds the stored warp evenly, as the upper rolls return to operating position, releasing all pressure on the warp sheet.

The Reiner Yarn Storage Device is operated by one hand-lever and driven by an electric motor, synchronized with the motor driving the warper. The yarn clamp acts automatically and is fitted with rubber trim.



Yarn Storage Device Down. Note how the top rolls have been lowered between the fixed rolls, to create folds in the warp sheet, thus drawing back the warp from the beam until the broken end is exposed for tying up.

Reiner Warpers & Creels are available for knitting and weaving purposes.

ROBERT REINER INC.

FOUNDED IN 1

550-556 GREGORY AVENUE
WEEHAWKEN, NEW JERSEY

10 MINUTES FROM TIMES SQUARE. Take Bus Nos. 61, 67, 167 from the Times Square Public Service Terminal at 260 West 42nd Street, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505.

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Stainless in Stock

Prompt Shipment . . .

Eleven Ryerson plants provide convenient stocks of Allegheny Stainless—bars, plates, sheets, strip, seamless and welded tubing and pipe, pipe fittings, welding flanges, welding rod, etc. Stocks are unbalanced from a size standpoint because of the great demand and deliveries not as fast as usual, but you can count on prompt shipment of most requirements. The uniform, high quality of Allegheny Stainless plus the expert counsel of Ryerson metallurgists make this the practical source for stainless from stock. Call, wire or write—

JOSEPH T. RYERSON & SON, INC., Steel-Service Plants at: Chicago, Milwaukee, Detroit, St. Louis, Cincinnati, Cleveland, Pittsburgh, Philadelphia, Buffalo, New York, Boston, Los Angeles.

OTHER PRODUCTS:

Bars	Alloys
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RYERSON STEEL

Sterling Ring Travelers

FOR SPINNING

Best quality wire, formed to rigid specifications, case-hardened and tempered by up-to-date methods, give you the Traveler to do your most difficult job.

HAVE YOU TRIED THEM?

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D. R. IVESTER	Box 882, Clarkesville, Ga.

STERLING RING TRAVELER CO.
FALL RIVER, MASS.

ing is begun, warm the bearing shell to a temperature of about 200° F. with a blow torch. This preheating the shell prevents too quick solidification of the hot, molten metal.

The quicker the bearing can be poured, the better. Fill it to the top of the waste head. When this operation has been completed, start the cooling by applying water or wet rags to the outside of the shell, working from the bottom of the shell slowly upward. The cooling effect will result in the heat being drawn outward; and the metal will begin to solidify at the inside surface of the shell, seating itself firmly and uniformly. The shrinkage that occurs will be made up with hot metal from the mandrel side. The excess metal at the waste head will then fill in, preventing voids.

If the bearing has been properly poured and cooled, the mandrel should not stick but should come loose easily and the finished bearing should prove to be sound and of the right structure to give long service at low maintenance and operating costs.

Spun-Dyed Staple

(*Continued from page 143*)

wool dyestuffs while retaining the direct-dyeing affinity of viscose fibers. It has a characteristic fullness of handle due mainly to an improved fiber resilience as compared with unmodified viscose. It was first introduced for use in blends with wool on the worsted system in filament deniers of about 4.5. The distinctive dyeing properties of Rayolanda render it particularly suitable for this, as, by simple control of dyebath temperature, solid or tone-in-tone effects with wool can be obtained in piece dyeing. In addition, in cross-dyed goods the Rayolanda content can be tinted off to reduce the chalk-like appearance sometimes apparent with viscose-wool blends. It is now also being made in deniers of 1.5 and 3 in staple lengths suitable for cotton machinery, and some very interesting blends with both viscose and wool have been produced in this way.

The use of 2-in. 4.5-denier Rayolanda in blends with either wool or viscose and in particular with spun-dyed viscose colors on woolen machinery has revealed a very promising field of development in dress and coating fabrics. Flax spinners are producing yarns in 100% Rayolanda because of its improved handle in cloth.

SPUN-DYED COLORS. From the experience already accumulated with spun-dyed fiber productions on all the spinning systems in Great Britain, it is abundantly clear that large-scale developments can be expected to follow

CALCO *dyelines*

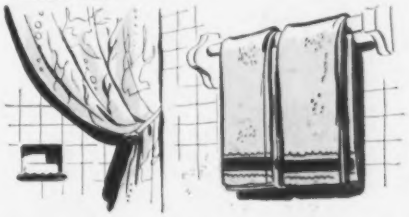
PUBLISHED BY CALCO CHEMICAL DIVISION, AMERICAN CYANAMID COMPANY
Bound Brook, New Jersey
New York • Chicago • Boston • Philadelphia • Charlotte • Providence

New "Fast Yellow Paste" Has Best Over-All Fastness Properties of Any Vat Yellow Available

Calcosol* Fast Yellow Paste, a new vat dye of the anthraquinone class, possesses the best over-all fastness properties of any vat yellow available at present. It produces a clear, bright, true yellow which will stand a minimum of forty hours' Fadeometer exposure even in very pale shades.

Possessing excellent working properties, Calcosol Fast Yellow Paste is especially recommended for dyeing rayon or cotton piece goods, yarn or raw stock in the usual dyeing equipment. It excels all other vat yellows in its fastness to light, chlorine, towel bleach and washing—hence it is excellent for towels, draperies, sheets and other applications requiring good fastness to light and laundering.

In application, Calcosol Fast Yellow Paste is not sensitive to reasonable variations in reduction and dyeing conditions.



ROYAL BLUES

Through the years royal blues have always been very popular and undoubtedly will continue so. Such a shade suggests richness, clarity and depth at the same time.

Calcoloid* Blue BLD Double Powder or the corresponding paste type is ideal for the base dye for such shades on cotton and viscose. This is an anthraquinone vat dye, exhibiting excellent fastness to light, washing, chlorine and various other everyday requirements.

Calcoloid Blue BLD Double Powder and Calcoloid Blue BLD Double Paste are suitable for application on cotton rawstock, yarn or piece goods by either the pigment or reduced methods in practically all existing types of cotton dyeing equipment.

VERSATILE COLORANTS

Calcotone* pigment pastes offer great versatility in a wide range of applications. Seldom is a group of colorants capable of such an extensive range of uses.

The various members of this group offer extremely economical and simple applications with practically any degree of light fastness desired. They are also outstanding for their brightness and the availability of suitable individual products with which to match practically any shade.

Calcotone Pigment Pastes are water dispersions which can be used for:

1. Pigment printing either by roller or screen without the usual hazards involved with water in oil emulsion systems.

2. Printing on cotton for coating with vinyl film.

3. Printing on cotton to be given a resin finish.

4. Padding in conjunction with a resin finish to eliminate a preliminary dyeing operation.

5. Padding on various cellulosic materials with suitable binders for a variety of end uses.

6. Very desirable sighting colors for wool, rayon, cotton or other fibers.

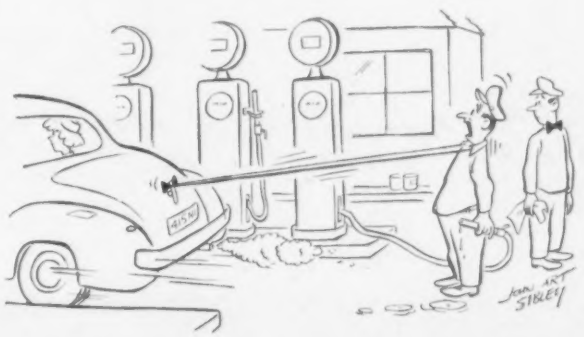
7. Coloring of paper in the beater.

*Trademark

FOR THE TEXTILE BOOKSHELF

Part I—Selection of Dyes for Continuous Pigment Pad Dyeing Processes. Part II—Laboratory Apparatus for Studying Continuous Dyeing. (Calco Technical Bulletin No. 793) — Contains important data concerning the properties of vat dyes which will be helpful where continuous dyeing methods have been adopted. Part II—A laboratory machine is described which can be used not only for matching shades but also for exploring variations in dyeing procedures.

Studies of Rayon Dyeing: Applications of the Dyeometer. (Calco Technical Bulletin No. 795) — Describes the application of the Dyeometer to quantitative studies of some of the dyeing conditions in the dyeing of rayon, and in making a comparison of the dyeing properties of various rayons.



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the larger capacity which ultimately will be devoted to their production. A few examples of their use in finished cloth are available here for examination. Requirements will differ somewhat in the various trade sections, with woolen spinners calling for heavy, dark blending shades, with worsted and cotton spinners using lighter, brighter shades.

Eleven colors including black are immediately available for cotton spinners, and it is expected that brown will be added shortly. They are: sulphur, SDF 19; Indian yellow, SDF 20; pink, SDF 21; red, SDF 14; light blue, SDF 12; medium blue, SDF 15; dark blue, SDF 16; applegreen, SDF 17; malachite green, SDF 18; and black.

All these are in Class 5 for washing fastness, and none are lower than Class 5 for light fastness, with half the colors in about Class 7. These performances in light and washing fastness, plus their ease of processing as compared with raw-stock-dyed fibers, make the dyes attractive with regard both to price and quality for color work. The writer's firm is actively engaged in exploring, with specialist assistance, the whole field of fiber-blending possibilities based on eleven colors. The writer has for some time expounded the view that cotton-rayon blending work based on an intelligent use of complementary fibers can extend the worth-while use of both materials.

Safety Conference

(*Continued from page 139*)

attract and hold the best workers. Public good-will is needed as never before. Public good-will cannot be obtained if there is a stream of maimed and crippled workers coming from the plant.

Because of the tendency of workers to become careless toward the machines they operate, the employer has had to resort to establishing and enforcing safety rules. Strict enforcement of these rules often places management in an embarrassing position. Sometimes, the reputation of being hardboiled and unreasonable is gained. However, being too lenient can easily result in a reputation of being indifferent to the welfare of employees.

Certainly in the field of accident prevention, the employer plays well and vividly the role of "his brother's keeper."

Sycamore Sets Record Of 6,359,672 Manhours

(Abstract of conference paper by A. W. BELL, superintendent of Sycamore Plant of Avondale Mills of Ala.)

Safety, at the sacrifice of production if necessary, is the keynote of opera-

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Reduce Floor Wear to a minimum.
Increase efficiency of employees.
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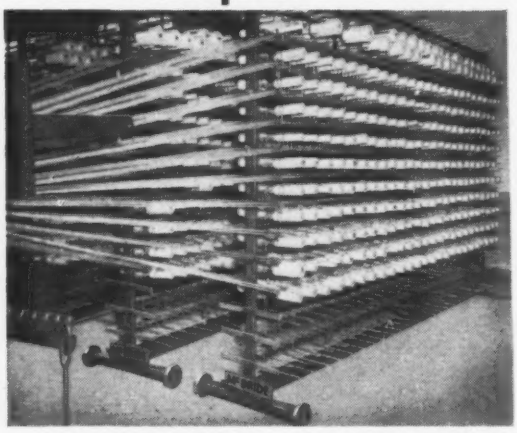

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MORE DURABLE — NO MORE LOOSE PINS

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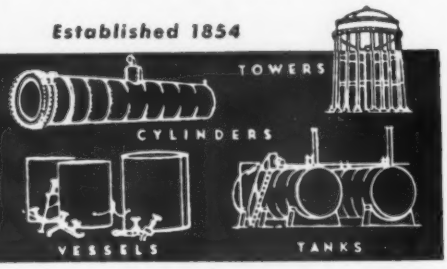


tion at Avondale Mills of Alabama. The Sycamore plant has worked 6,359,672 man-hours, since Oct. 3, 1942, without a lost-time accident. Three basic rules are followed at Sycamore to hold accidents to a minimum. They are: (1) Make everything as foolproof as possible; (2) strive to keep workers constantly safety conscious by means of an active safety organization; and (3) see that safety policies are carried out.

No hazardous condition is permitted to continue. If such a condition arises in the power transformer, for example, which cannot promptly be corrected without exposing a man to possible injury, the entire plant is shut down until the condition is corrected.

Each new installation, such as a materials-handling system, put in the mill is made entirely safe. Only strong materials are used to construct it; electrical wires, switches, etc. are inclosed; and all gears, pulleys, etc. are adequately guarded.

PICKER BEATERS. One example of making machinery foolproof is the work done on picker-beater sections. All beater sections are locked and the fixers are given keys. No one can open the beater sections except the designated person on each shift.

Even the designated person is forbidden to go into the alley between two pickers unless both machines in the alley are stopped. This practice is to guard against breaking and flying belts and chance contact with running pulleys.

In the case of installing a new transformer, a substantial wire-mesh fence is built around the transformer before power is permitted to be turned on. The gate in the fence is kept locked, and only the designated maintenance man carries a key. No one except him is permitted inside the fence.

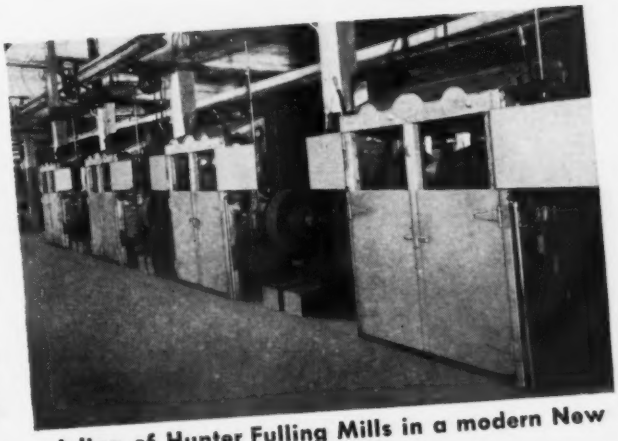
Other precautions taken include locking gear covers on drawing frames and placing fire-extinguishers in central locations. The extinguishers are grouped in cross alleys and at the ends of the rooms instead of being scattered on posts all over the rooms. It has been found that central locations for extinguishers have cut down considerably on the confusion and waste of effort that usually result when a fire occurs.

Special fire fighters are trained to handle fires. When fire breaks out, only these workers participate in bringing it under control. All other employees are instructed to stay out of the way.

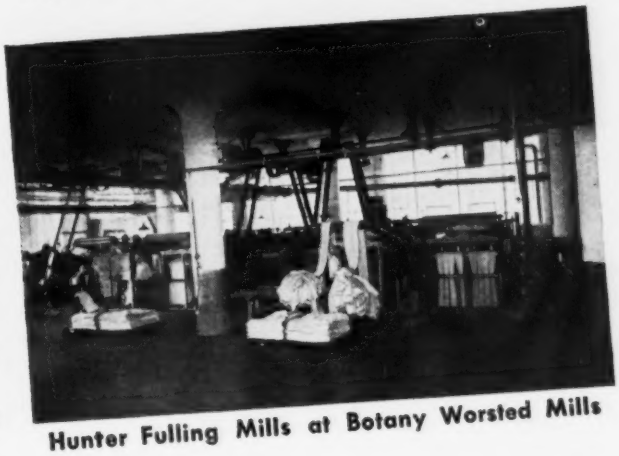
SAFETY INSTRUCTION. Maintaining safety consciousness is done by the supervisory staff and a rotating safety

Memo on Modernization

Why So Many Mills Specify . . . HUNTER High Production FULLING MILLS



A line of Hunter Fulling Mills in a modern New England mill.



Hunter Fulling Mills at Botany Worsted Mills

The illustrations on this page show many high production Fulling Mills as installed in a New England woolen mill and at Botany Worsted Mills. Hunter Fulling Mills are equipped with every possible new improvement, such as sectional rubber rolls, stainless steel linings, throats, stop motion and whip roll. Hunter Mills may also be fabricated entirely from stainless steel. These units can be equipped with pneumatic pressure for both top roll tension and crimping box tongues. They may, of course, be equipped with or without motor drives.

For full details we invite you to send for catalogs and the names of many prominent users—no obligation of course. Write.

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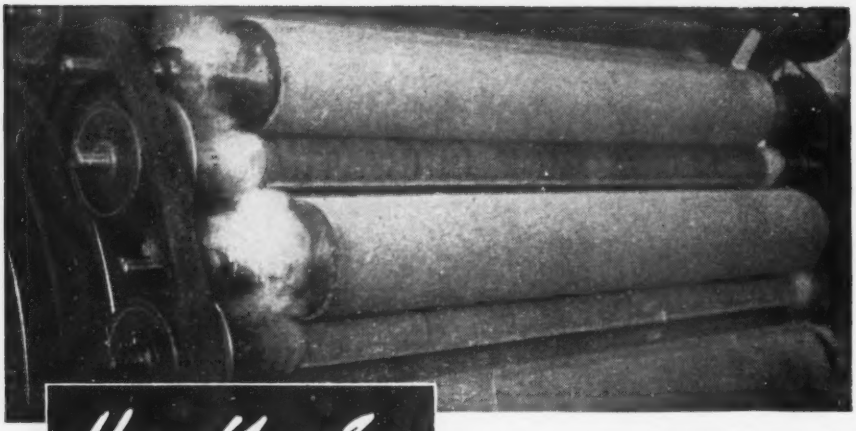

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The Fleet Line

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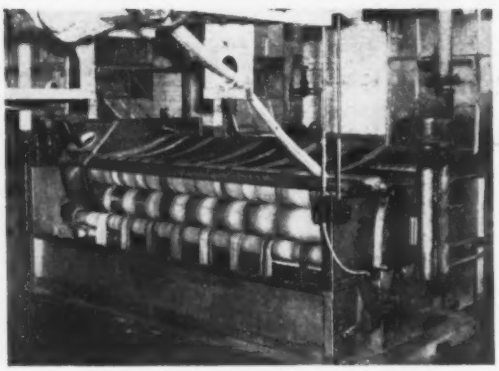
"Jack-Of-All-Jobs"



The Fleet Line Stainless Steel Slack Washer has proved to be an efficient "jack-of-all-jobs." In this particular installation it is used for washing back greys from the printing machines, for rope washing printed fabrics, and for the various small soaping jobs which are always to be done. Both all cotton, and spun rayon and cotton blends are handled in this machine. Operating speed, in most cases, is from 60 to 70 y.p.m., although higher speeds are possible if necessary.

You may wish to use the R & L Fleet Line Slack Washer for one particular job and with one type fabric, but it is still good to know you have a versatile washer on hand ready for *all* jobs.

Catalog on request

RIGGS AND LOMBARD

FOOT OF SUFFOLK ST., INCORPORATED LOWELL, MASS.

committee. When a new employee is put to work, the overseer of his department takes time to explain thoroughly the machine he is to work on. The hazardous parts are pointed out.

For example, when a new employee is put to work around cards, the overseer actually demonstrates the danger points of the card. He stops the card, removes the card feed roll, and has the new worker stick his fingers against the lickerin. The overseer then turns the lickerin by hand until the points of the wire threaten to nip the employee's hand. This procedure is to impress upon the worker the danger that lies in the lickerin.

Another demonstration on the card consists in placing a piece of folded paper behind the front knife plate and turning the cylinder by hand. The cylinder clothing mutilates the paper, and the paper is shown to the employee.

Wherever possible, a worker who has lost fingers, a hand, or an arm in an accident on the card is pointed out to the new employee.

Such demonstrations and explanations take up a considerable amount of the overseer's time, but at Avondale it has been found to be time well spent.

Special effort is made, Mr. Bell said, to incorporate all the improvements suggested by the safety committee and by other employees. Unless the workers see that management is interested enough to correct unsafe conditions, and to do it at once, they will lose interest. The value of the safety program is then lost. Suggestions will stop coming in.

SAFETY INSTRUCTION. Safety posters are used extensively at Sycamore. Each day the hanks, or other piece-rate units, of the employees are posted in a prominent place in each department. Nearly all the workers, particularly the piece-rate workers, look at the production board each day to see how much money they made the day before. Beside these production boards in each department, the safety posters are placed.

The glass cases in which the production records and safety posters are placed are kept clean. The posters are changed frequently. Attention is directed to the posters by the supervisors. Thus, readership of the safety messages is high.

Seeing that the safety program is carried out requires constant supervision. All the elements of supervision are employed. Publicity in the weekly house newspaper is also used. In cases where the usual appeals fail, Mr. Bell said, "we get tough."

Doffers running with doff boxes was cited as an example of an unsafe

THE overseaming, hemming and plain stit-hing operations on these beautiful garments by Fairy Silk Mills, are representative of the superlative work produced by "W. & G." Sewing Machines.

"W. & G." machines play a prominent part in the production of all garments made by Fairy Silk Mills.

There is a "W. & G." machine best suited for your particular requirements.

Send for your copy of the "W & G." Machine Catalogue, Form 769.

WILLCOX & GIBBS SEWING MACHINE CO.

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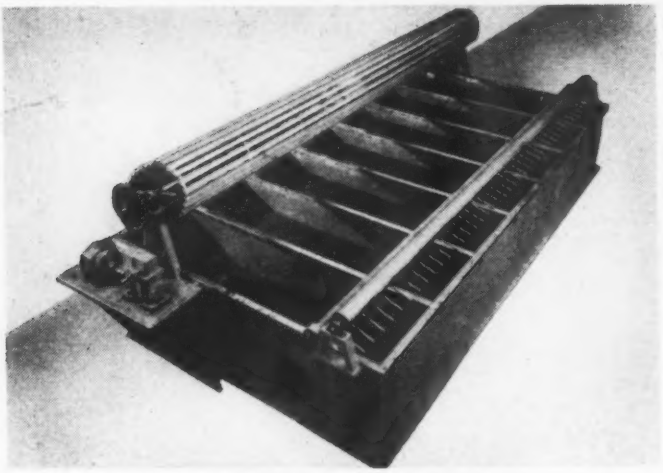

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Variable speed motor drive. Production range, 2500 yds. to 7500 yds. per hour.

DRYERS, WASHERS, AGERS, COTTAGE STEAMERS

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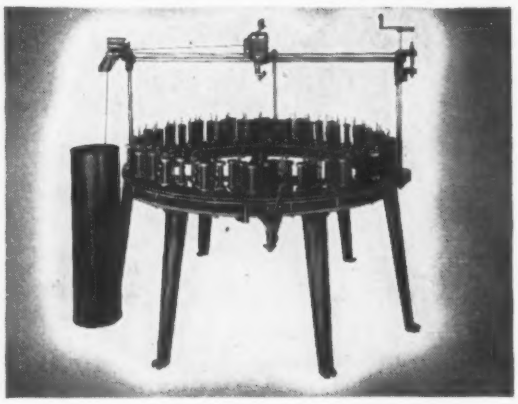
NEBUTTCO **BRAIDERS** NEBUTTCO



We are confident of our ability to give satisfactory service in arranging your braiding equipment for efficient production.

Our engineers are at your service

Let us know your requirements

NEW ENGLAND BUTT COMPANY

ESTABLISHED 1842

PROVIDENCE 7, R. I.

practice that is hard to control. Younger boys are often caught running with doff boxes. They are first cautioned, and if the practice continues they are laid off from work for a week.

Mr. Bell pointed out that 85% of the employees seldom have an accident. The other 15% account for most accidents.

Wool Cone Winding

(*Continued from page 119*)

ing supply package used and the desired weight of the cone. A weight often found is 2.4 oz. per supply bobbin and 1½ lb. per cone. In that case, 10 supply bobbins are used to produce a 1½-lb. cone.

TO FIGURE TASK. With the above data and time standards, cone-winding tasks and production standards are computed as follows for 1.0 run wool yarn:

Length on supply bobbin = 2.4 oz. × (1 run ×1600 yd.) ÷ 16 oz. = 240 yd.
Length on cone (1½ lb.) = 24 oz. × (1 run × 1600 yd.) ÷ 16 oz. = 2,400 yd.
Running time of supply bobbin = 240 yd. ÷ 360 yd./min. = 0.667 min.
Running time of cone = 2,400 yd. ÷ 360 yd./min. = 6.670 min.
Supply bobbins required per spindle per hour = 60 min. ÷ .667 min. = 90 supply bobbins.
Cones wound per spindle per hour = 60 min. ÷ 6.67 min. = 9 cones.
Yarn breaks per spindle per hour (from break table) = 1 break.

Applying the established time standards to the above gives totals in minutes as follows:

Stick up supply bobbin	(90 × 0.22) =	19.80
Doff full cone...	(9 × 0.09) =	0.81
Tie up yarn break.	(1 × 0.20) =	0.20
Tending time, min. per spindle hr.....		20.81

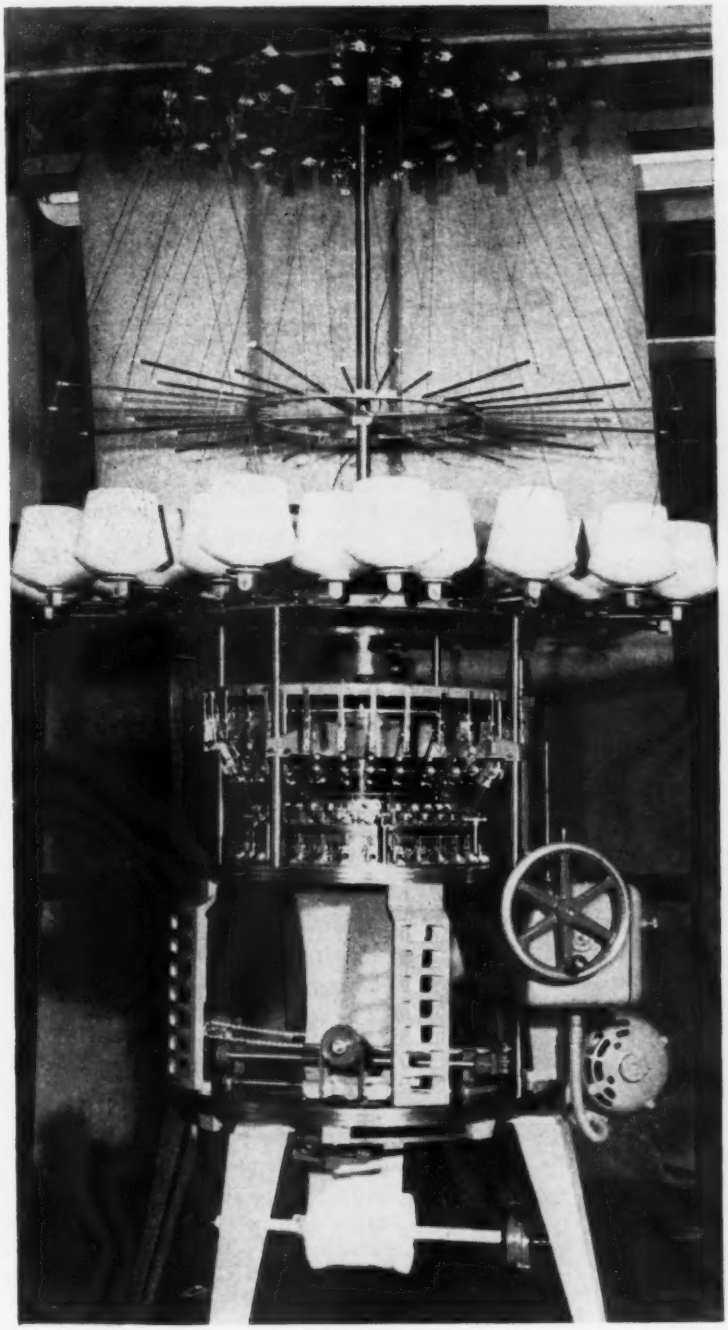
This is the tending time per spindle per hour of machine running time. The total time required actually to produce 9 cones per spindle is therefore 60 min. machine running time plus 20.81 min. tending time, or 80.81 min. Allowance of 15% to the operator for fatigue and personal needs reduces the expected working time to 51 min. in each hour. Therefore, if in 80.81 min. the tending time per spindle is 20.81 min., in 51 min. it will be 13.13 min.

Task: 51 min. ÷ 13.13 min. tending time per spindle = 3.88 producing spindles. The number of spindles assigned as a task is then four or more spindles. The number of spindles above four assigned as a task should be based on the capabilities of the operator. Where machine capacity

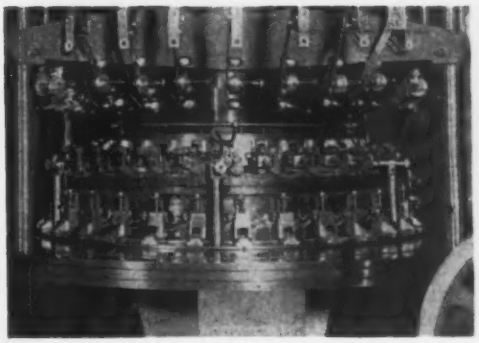
A NEW HIGH IN HIGH SPEED PRODUCTION FOR YOU!

The EDMOS 20" Diameter — 30 Feed

Type EEM Super Multi Feed Plain Rib Body Machine



Here is this startling and heralded development in knitting machines made possible by Edmos engineering skill. In actual operation, this high speed marvel has proven its ability to produce up to four times the output of older type machines—on the same floor space! Think what this offers you in high speed production and added profits!



See this superb camming system along with a complete demonstration of the new Edmos Type EEM 20" 30 feed machine at the Edmos plant. Especially designed for manufacturing fabrics in the Swiss rib family. Note these famous Edmos features:

- 1½ FEEDS PER DIAMETER INCH
- SIMPLIFIED CAMMING SYSTEM BOTH ON CYLINDER AND DIAL
- GEAR DRIVEN DIAL
- OVER-SIZED DIAL SHAFT
- ADJUSTABLE MOTOR MOUNT
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- INTERCHANGEABILITY

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FABRICS CLEAN . . . SOFTER . . . COLORFUL!

You couldn't ask for an easier, quicker-sudsing soap or flakes than Drummond to give your fabrics the "New Look"!

Both Drummond Soap and Flakes have the advantage of high body and low alkali content . . . an advantage that leaves fabrics clean with a downier feel, brighter color, and whiter white. Try a sample and note the difference.

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permits, a satisfactory method is to leave a number of unoccupied spindles adjacent to the last producing spindle and permit the operator to run as many of the additional spindles as she can.

Standard Production is based on 3.88 producing spindles and is computed as follows: 3.88 spindles × (51 min. — 13.13 min. tending time, during which the spindles are not producing) × 360 yd. per min. machine speed ÷ (1.0 run × 1600 yd.) = 33.06 lb. per hour.

These computations repeated for the range of yarn counts to be cone wound give the task and standard production figures shown in the tables.

Piece-Work Rates per pound are based on standard production per hour and are computed by dividing the established cone-winding base rate by the standard production. For example, if the base rate is $1.00 per hr., the piece-work rate per pound for 1.0 run wool yarn is $1.00 ÷ 33.06 lb. = 3.02¢ per lb. This rate is paid to the operator for each pound produced above standard, since, according to good wage-incentive policy, increased earnings should bear a direct relation to increased production above standard. The base rate is guaranteed and is paid whenever an operator produces less than standard.

Silicone Water Repellent

(*Continued from page 124*)

cone fluid emulsions. Glass fabrics treated in such a manner have an amazingly soft hand and drape, characteristic of the better organic fabrics.

This treatment was not applicable, however, to organic textiles because of the high curing temperatures required to develop the maximum water repellency of the silicone and to fix it to the glass surface. The search continued, and a new liquid silicone has recently been developed which can easily be applied to organic fabrics. This liquid silicone, known simply as DC 1107, is different from other silicones in that heating at relatively low temperatures develops its hydrophobing properties. This fact makes it possible to apply DC 1107 to fabrics such as wool, rayon, nylon, and cotton without damage to the fibers.

The DC 1107 is a very light, straw-colored liquid silicone having a low viscosity, only slight volatility, and no acidity or alkalinity. On heating at 300° F. the liquid quickly polymerizes in and on the fibers, making them water repellent. Water repellency imparted by DC 1107 is resistant to dry-cleaning solvents and to

NOW... a rayon tinting machine that is *Gentle*

Johnson rayon tinting and soaking machine, Senior Model, is equipped with six arms each of which accommodates 10 pounds of dry yarn. Three minutes are required to treat yarn in skeins, and eight minutes in cakes. A Junior Model is available with three arms.

If machine-damage and uneven tinting of yarns have been cutting into your rayon processing profits — here is some good news for you.

The Johnson Engineering and Manufacturing Company of Wilkes-Barre, Penn., have developed a rayon soaking and tinting machine that minimizes yarn chafing and gives more uniform distribution of color.

The secret of the "gentler touch" is in the improved spray heads which are located directly over revolving MONEL* skein arms. A balanced quantity of solution is delivered to both sides of the skein. Since the solution weight and pressure is thus equalized, chafing at the skein arms is largely eliminated.

Danger of metallic contamination and rust discoloration is eliminated in the Johnson machine by using corrosion-resistant MONEL for all yarn and solution contact points. And because of its resistance to scaling and excellent heat-transfer characteristics, the MONEL cladding of the steam-jacketed tanks insures long service life and lower maintenance costs.

Other outstanding features of the machine are —oilless bronze bearings, temperature control for keeping solution between 120° and 160° F., steam regulator, spray control valves, moisture proof switches, and dial temperature indicators.

For full information, write to the Johnson Engineering and Manufacturing Co., Wilkes-Barre, Penn.

*Reg. U. S. Pat. Off.

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EMBLEM OF SERVICE INCO

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it's cleaner

All cleansing operations using either soap or synthetic detergents are stepped up when built with Metso Granular. A scientifically balanced alkali-silica detergent, Metso loosens more dirt and grease. And its unique function is to prevent the redeposition of removed dirt. That's why with Metso, it's cleaner.

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Specialists in Textile Feeding Machinery Since 1863

50 LAGRANGE STREET
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the action of water and detergents.

The general properties of DC 1107 are given in Table II. (p. 124).

Although DC 1107 may be applied from a solvent solution, most of our work has been done with an oil-in-water emulsion, since this is adaptable to finishing equipment available in most mills. Experimental mill runs have shown that an emulsion of DC 1107 may be padded onto textiles and excellent hydrophobing developed with conventional drying equipment. In these mill runs, an emulsion of DC 1107 was applied, by padding at room temperature, at a concentration designed to give 3 to 4% pickup of the silicone based on the original fabric weight. The silicone was fixed to the fibers and water repellency developed by drying and heating for five minutes at 350° F. No final washing was necessary, since there are no harmful acids, alkalies, or salts in the emulsion. The emulsion does not have any effect on the color of fabrics.

Additional work has shown that water repellency may be developed more rapidly on the more heat-resistant fabrics such as nylon by using temperatures upwards of 400° F. The rate of moisture removal does not appear to affect the final results.

Emulsions of DC 1107 are easily made by using a high-speed stirrer, an Eppenbach mixer, or a colloid mill. A 50% master emulsion is prepared by mixing the following ingredients at room temperature: 42.9% by weight of water; 0.2% by weight of glacial acetic acid; 6.9% by weight of emulsifying agent (Ammonyx T, Onyx Oil & Chemical Co., recommended); and 50.0% by weight of DC 1107.

One third of the total water plus the acetic acid and emulsifying agent are first thoroughly mixed. Then the DC 1107 is slowly added and the remainder of the water is finally mixed in. Containers used for mixing, storing, or applying emulsions must be absolutely clean and free from other materials, particularly the usual soaps and anionic wetting agents.

Properly prepared, the master emulsion remains stable for a period of a month or more; but it must be stored in a vented container. The presence of water with the silicone causes a slow chemical reaction which evolves a small quantity of hydrogen gas; but under normal conditions of storage and use, the efficiency of the DC 1107 is not impaired. Just prior to use, the master emulsion is diluted with additional water at room temperature to a concentration such that 3 to 4% pickup will be obtained on the fabric.

Textiles treated with an emulsion of DC 1107 and properly cured are

REWINDER

MAXIMUM PERFORMANCE RESULTS AT MINIMUM COST!

Catch your shortages and fabric imperfections. Progressive Rewinder features include variable speed in either direction for inspection and measuring. Measures and folds simultaneously with neat packages resulting. Simple to operate. Built for endurance. Write today for prices.

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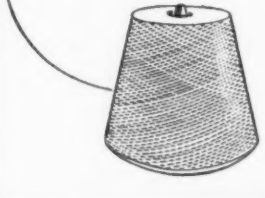
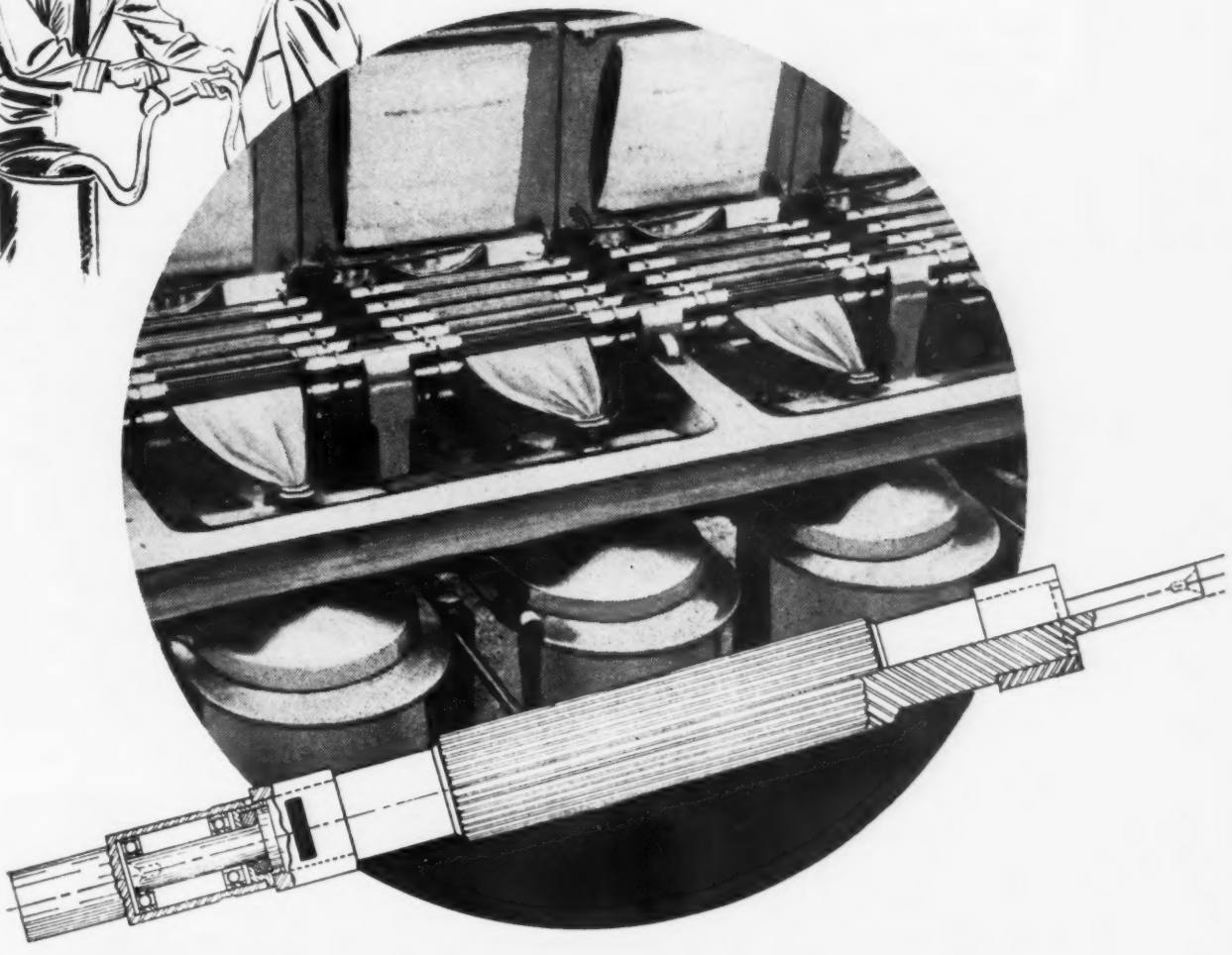
SYMBOL OF QUALITY COAST-TO-COAST



Tests Show...



Medley Drawing Produces a Better Sliver!

Sliver tests made from actual installation operation show variations are reduced to a minimum with Medley Ball-Bearing Drawing.

Sliver from Medley Precision Drawing results in smoother slubbing, more efficient roving and spinning because variation is reduced to a minimum with Medley's sealed-in ball-bearing top rolls. The sealed in, permanent lubrication feature assures a grease-free sliver which further reduces production problems.

Medley "8 Ends Up" drawing is daily proving its superiority in processing cotton, wool, synthetics, ramie and blends in staple lengths from 5/8-inch to 13 inches. For information of how you can change over to this more efficient drawing, call or write Medley today.

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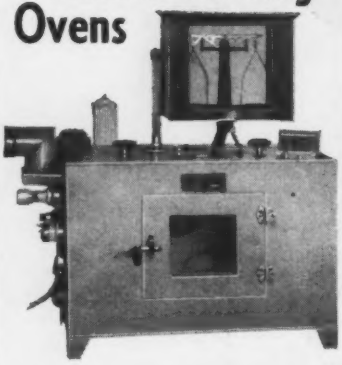

For accurate testing of water content in yarn. The 8-basket oven, with 3" x 3" baskets, may be changed to 6 baskets, 4¼" x 4¼", both 6" deep. Occupies table space 20" x 40".

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odorless and have a soft full hand. They possess a high degree of water repellency which is durable to dry cleaning and laundering. Since DC 1107 is neither acid nor alkaline, it does not weaken the fabric to which it is applied.

Better Cotton Preparation

(Continued from page 131)

shift. Around drawing frames we use cans to hold the waste, and the waste is weighed at the end of each shift. Also, drawing waste made in creeling long-draft slubbers is weighed at the end of each shift. This card and drawing waste is emptied into large boxes and hauled to the opener room, where it is fed into a waste hopper in the blending line at the rate of 5% of the total mix of cotton. Roving and scavenger wastes are run through a waste machine before being fed into the blending line.

"The percent waste we try to reach at each process is as follows:

Cards	2.0%
Drawing	0.5
Creeling slubbers	0.3
Roving	0.08
Scavenger	0.5

QUESTION NO. 3: *Is there any advantage in blending staple lengths—for instance, can you get a better break from a mix of 50% ⅞-in. and 50% 1-in. stock than you can from all ⅞-in. or all 1-in? Would you set the rolls for ⅞-in. or 1-in. staple?*

Twenty mills answered this question, six indicating no experience with blending different staple lengths. Of the other 14 mills, eleven were of the opinion that blending can be done to advantage by properly considering two factors—cotton cost and breaking strength—from the standpoint of end-product requirements. Three mills stated that they prefer not to mix staple lengths because of complications involving breaking strength, cost, roll settings, twist, tension, etc.

In general, the eleven mills that find advantages in blending staples agree that ⅞-in. cotton costs less and is weaker than 1-in. cotton and that the cost of the mix and the strength of the yarn can be varied at any point between the two extremes. It was agreed that rolls should be set for the longer staple.

Results of extensive tests on blending fibers were tabulated by Mill No. 23 (see Table I). The mill wrote: "We concluded from these tests that the 1-in. Middling cotton was slightly superior in performance (to either ⅞ in. or a 50-50 blend of ⅞ in. and 1 in.). Within the difference in staple

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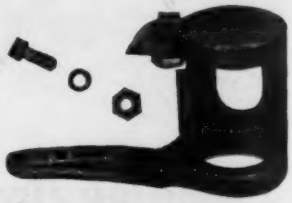

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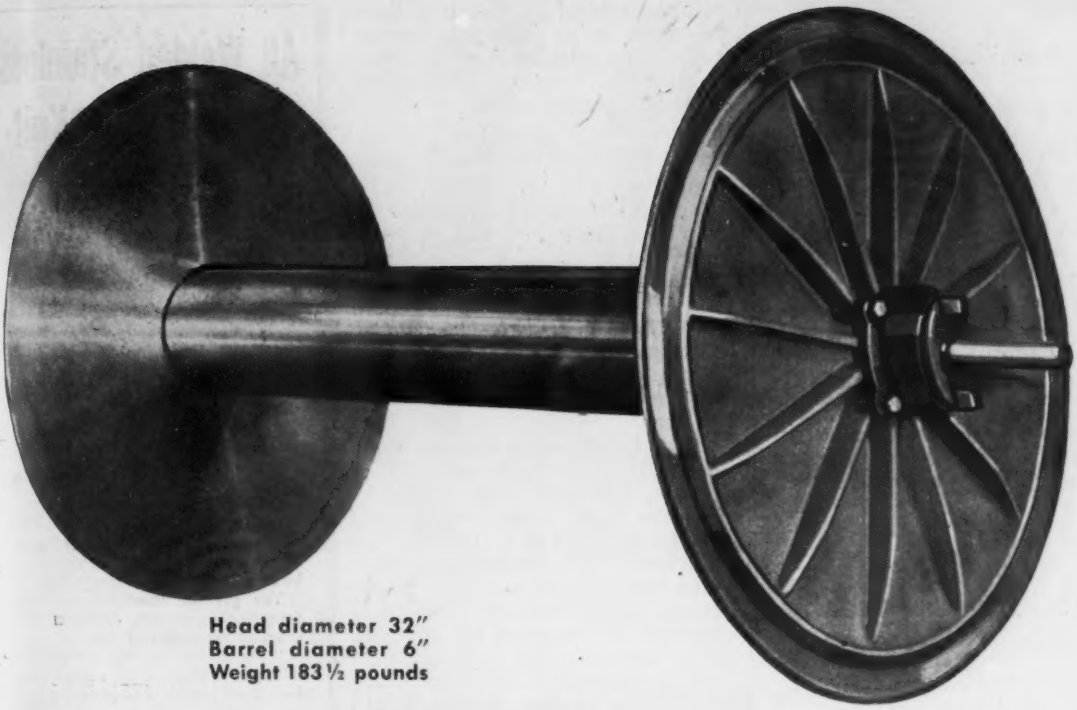

Head diameter 32"
Barrel diameter 6"
Weight 183½ pounds

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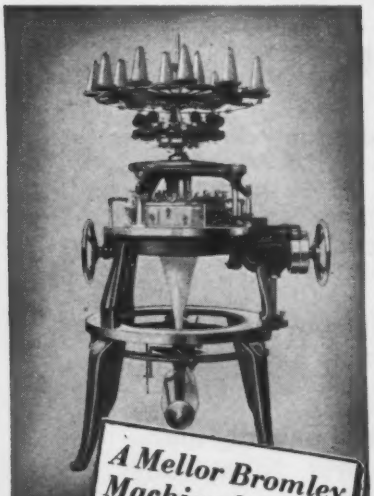

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descriptive leaflets of the Mellor Bromley Interlock and many other top line machines

MELLOR BROMLEY AND CO. LTD.
LEICESTER, ENGLAND

lengths covered by this test, there seems to be no particularly harmful effect from blending staple lengths."

Mill No. 25 reported the following fiber-blending test results:

	50% 1 in. 50% 1⅛ in.	100% 1⅛ in.
Yarn No.	24.33	24.33
Type yarn	Filling	Filling
Twist multiplier	4.05	4.05
Break (skein)	69	68
Break factor	1679	1654

QUESTION NO. 4: *How important is it to maintain a uniform moisture content in the picker room? At what relative humidity can the best cleaning be done?*

Twenty-four mills answered this question. Thirteen mills were of the opinion that maintaining a uniform humidity in the picker room is important. One mill stated that the advantages gained do not justify the extra work and cost involved in maintaining uniform humidity. The other ten mills that answered the question either have not tried to maintain a uniform humidity or have found that the flow of air from the outside or from the card room into the picker room gives sufficient humidification for picking.

The relative humidities maintained in the picker rooms are:

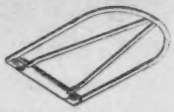
Humidity%	Maintained by
45	1 (mill)
45-50	1
50	5
50-55	1
55	2
55-60	1
60	1
62	1

QUESTION NO. 5: *If you have changed from three-beater to two-beater pickers, did you find the yard-to-yard variation increased or decreased? What else was accomplished by the change?*

Mill No. 1 wrote: "All of our pickers are equipped with three beaters. However, we removed one beater and found that there was not any difference in the yard-for-yard variation. The only advantage of the two-beater picker over the three-beater picker is the decrease in the amount of maintenance."

Mill No. 13: "About a year ago we changed from three-beater to two-beater pickers. On a yard-to-yard basis, we did not find any difference in weight of lap. These beaters were taken out because they were not the type we wanted and the type work we were running did not require more than two beaters. We did not make any tests on breaking strength, ends down, nep and trash count at the card,

All Welded Stainless Steel Tubular Knit-Goods Spreaders



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Two features make it outstanding: (1) simplicity of construction and (2) strong and durable for long life.

Constructed of stainless steel, its width size varies from 6" to 42".

Illustrated is the spreader, which eliminates sizing problems on tubular knit goods, and will not break, or bend even under extreme conditions.

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... says a mill operating executive with 30 years' experience.

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Increase Production
Lower Manufacturing Costs . . . and
Improve Quality

Whether you spin cotton, wool, worsted, jute, flax, asbestos, cut staple or continuous filament rayon, you too can enjoy the benefits and reap the profits made possible with Pneumafil.

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RAYCO

***for* COTTON AND SYNTHETIC FIBERS**

or fiber breakage. Unless one has unusual opening and cleaning equipment, we would not recommend that two-beater pickers be used on normal 100% cotton mixes."

QUESTION NO. 6: *What has been your experience with ball-bearing lap pins on pickers?*

Only seven mills indicated experience with ball-bearing lap pins. Three of these mills reported favorably on the pins, three expressed dissatisfaction, and one stated that it found no advantages from the use of ball-bearing pins.

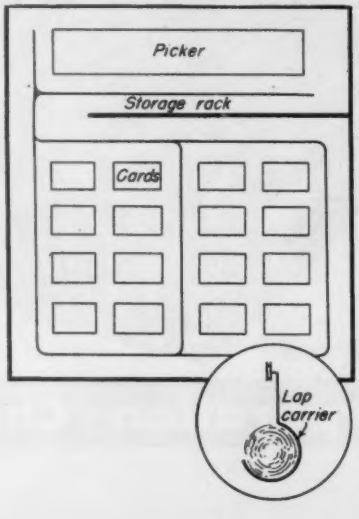
Two advantages were cited: (1) a more even lap, and (2) less wear on the rolls in the calender rack.

Three weaknesses of the ball-bearing pin were pointed out: (1) the journals bend easily, (2) the bearing heads become loose, and (3) the bearings fail.

From the floor it was reported that bending of the journals is much more apt to occur on the hollow-pin type than on the solid-pin type. Both types are available.

QUESTION NO. 7: *Please discuss materials-handling devices that have been successfully used in the opener, picker, and card rooms. If you have an automatic conveyor system for handling laps, card sliver, or drawing sliver, please describe.*

Considerable interest was shown in this question. Although no such devices were reported to be in operation, a lap-handling system now in the blueprint stage and being installed was described by the representative of one mill. A freehand sketch drawn on a blackboard from memory during the meeting is reproduced here. (This sketch was used and is shown here only to give a general idea of how the system will work. It bears no relation to the dimensions of the rooms or the number of machines or machine alleys.)



A lap from the picker is doffed directly onto a lap carrier attached to an over-head rail conveyor track. The lap moves along the track to a pair of automatic scales, which weigh the lap and record the weight. If the weight is above or below tolerance, the carrier is automatically switched off the main track onto the setback track. If the weight is all right, the lap is transported to the card room.

The track makes a circuit of the card room, with side tracks down each lap alley between the cards. Manual switches at the backs of the cards permit the card tenders to control the lap.

Advantages expected from the operation of the system include:

Better quality of lap

Less waste

A gain of floor space behind the cards

Reduced cost of handling laps.

QUESTION NO. 8: *Give suggested grinding periods for cards equipped with: (1) continuous strippers, (2) vacuum strippers, (3) roll stripping, and (4) other types of stripping.*

Answers to this question are given in Table II. Also see Table III for test results on stripping methods and grinding frequencies conducted by Mill No. 23.

QUESTION NO. 9: *Give your experience with ball bearings on card comb boxes, lickerins, and cylinders.*

Of the fifteen mills that indicated experience with ball-bearing comb boxes, six stated that they have found them satisfactory and nine are still experimenting with them. Several minor points of dissatisfaction were mentioned, but no mill indicated that it has definitely decided against ball-bearing boxes.

No dissatisfaction was expressed in regard to the use of ball bearings on lickerins and cylinders.

QUESTION NO. 10: *What is the best method of maintaining continuous strippers?*

Mill No. 8 wrote: "We have one man responsible for maintenance of continuous strippers.

"We average approximately 13,000 card hours to each set of needle bars.

"When needle bars are worn or broken to such an extent that they cannot be set to clean the cylinder properly they must be replaced. We replace individual needles where they are not too bad."

Mill No. 17: "Our cards are ground each 2,800 lb. of production per card. At each grinding, our strippers are removed, needle bars examined and replaced if necessary, settings checked. strippers replaced and oiled, and belts tightened. Card grinders also oil strip-

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pers each shift. Every 3 mo. the strippers are disassembled, cleaned, and overhauled.

"We replace needle bars by sets for the following reasons:

"Needles broken, worn short, or weak; points worn and turned.

"Our strippers have been operating 15 mo. Twenty percent of the needle bars have been replaced. The life of needle bars depends much upon the care given them, the grade of stock being run, and the pounds per hour of carding. We estimate the life of our needle bars to be approximately 18 mo. of 3-shift, 6-day operation, with cotton grades ranging from Low Middling to Good Middling, carding from 10 to 21 lb. per hr. We do not attempt to replace individual needles in the bars."

QUESTION NO. 11: *What is your nep count at each process from raw cotton through drawing?*

Mill No. 8 wrote: "There seems to be no uniform method for determining nep count. Any actual count would show considerable variance and be of little significance. However, we do find that nep counts at different stages of processing reveal that:

Bales of cotton show slightly fewer neps than picker laps.

Card sliver shows about 50% fewer neps than picker laps.

First drawing shows slightly more neps than card sliver.

Second drawing shows slightly more neps than first drawing."

QUESTION NO. 12: *What is the maximum feet per minute that drawing can be or should be operated without affecting quality?*

Answers from 25 mills revealed that drawing speed varies from 80 to 178 ft. per min. in the different mills. Mill No. 14, which reported the lowest speed, wrote: "At our mill we use all cushion-type rolls. We run our drawing between 80 and 90 ft. per min. We find that this is the best speed to maintain quality in our type of goods."

Mill No. 26, which reported the highest speed, wrote: "Our metallic and cushion rolls run the same speed —178 ft. per min. Wet get lower variation from cushion rolls, but for all-around performance we prefer metallic rolls in order to avoid buffing and lapping of the rolls."

Mill No. 22: "Our finisher drawing is running at 140 ft. per min. Sliver tests made on speeds as low as 68 ft. per min. revealed no changes in variation. At a speed of 191 ft. per min. the sliver variation increases 9.5%. This would indicate that the critical speed, for our own particular conditions, lies somewhere between 141 and 191 ft. per min.

"We prefer metallic rolls for our type of work. The metallic rolls have less lap-ups, the maintenance cost is less, and the drawing is not too sensitive to excessive changes in the weather."

See Table IV for test results reported by Mill No. 23 (p. 131)

QUESTION NO. 13: *Has the use of ball-bearing top rolls with sealed-in lubrication on roving and spinning frames reduced roll picking, given more even roving or yarn, better breaking strength, cleaner yarn?*

Answers from eight mills revealed considerable difference of opinion on this question. Five of the eight mills stated that roll picking had been reduced, while three said that they have not been able to reduce the frequency of their roll picking. Only two mills reported that more even roving or yarn is obtained from ball-bearing top rolls, whereas six stated that evenness is not affected.

Two mills did not express an opinion as to whether or not better breaking strength is obtained. The other six mills have found no change in breaking strength. As to cleanliness of the yarn, three mills reported that the ball-bearing rolls give cleaner yarn, four stated that they have noted no difference, and one said that there was a noticeable increase in trash in the yarn.

A Quality Mill

(*Continued from page 112*)

rooms, rest rooms, machine shop, parts stockroom, offices, and lobby are housed in a 30-ft. span section which forms a right angle flanking the manufacturing area on two sides. The walls of this section are made of prefabricated Robertson "Q" siding, a product which is aluminum on the outside, steel on the inside, with a layer of insulation in between. Lath and plaster complete the interior facing. Use of movable wire partitions in the plant proper for separation of the yarn stock room leaves the plant easily adaptable to any future changes which may prove desirable.

A metal roof deck and insulation, covered by 20-yr. built-up roofing, are supported on standard welded H-section trusses. Use of these trusses was said to eliminate most of the special detailing and purchasing difficulties currently encountered in construction of a building of this type.

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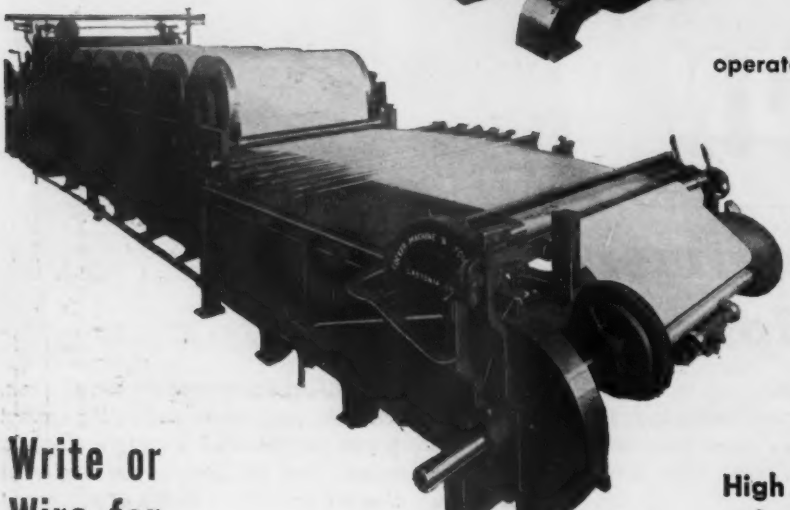

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Heavy construction is only one of the many superior features of this remarkable warper

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No. [illegible] — because of high film strength and long life it reflects outstanding performance in most types of enclosed gears (speed reducers).

No. 107 — One of the most popular grease type products for general application by pressure gun or cups.

No. 76 — For a wide range of grease applications, especially at temperatures above 200 degrees F.

No. 130-AA — Known nationwide as the superior lubricant for open gears, heavy duty bearings, wire rope, etc.

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CONSULT YOUR CLASSIFIED TELEPHONE BOOK

York, N. Y., the plant combines architectural beauty with engineering skill to produce at minimum cost a manufacturing unit designed to operate at peak efficiency.

ENGINEERING FEATURES. An outstanding engineering feature of the plant is the "unit-area" air-conditioning system designed for maximum economy, flexibility, and ease of maintenance. All air-conditioning equipment is mounted well above the floor among the welded H-section trusses supporting the roof, thus effecting a saving in floor space. Three air-conditioning units, all accessible from a catwalk extending across the plant, are made up of various components which were assembled by Austin engineers on platforms on the floor. The platforms were later raised to their permanent location above. It is estimated that this method of assembly alone saved $3,000 in construction cost. Each unit consists of an intake which combines return air and fresh air entering through motorized dampers. The air is passed through a capillary washer and humidifier supplied by well water at 55° F. (thus obviating the need for refrigeration equipment), passes through reheating coils, and is blown by fans through ducts into the room. Each of the three units serves a given area, and space has been provided for additional units in case of expansion of the plant. Steam from a small, oil-fired boiler is circulated through the fan units for winter heating. Five changes of air per hour are made by the unit while maintaining uniform conditions regardless of outside temperature changes.

The side walls of the manufacturing area are made up, from outside to inside, of 4 in. of face brick, 4 in. of sand-lime brick, 1 in. of Fiberglas insulating board with mastic vapor seal, 4 in. of cinder block. Windows, in a 2-ft. 7-in. strip, 9-ft. 10 in. above the floor are made of intermittent sections of glass block and transparent Thermopane.

The plant is now being fully equipped with the modern winding, warping, and weaving machinery necessary for manufacturing the high-style, high-quality silk and rayon fabrics for which the Ducharne firm has been famous for 25 yr.

No better evidence is needed of worker enthusiasm resulting from the pleasant exterior and interior atmosphere of the plant than the 1,200 applications for employment received in the two months the plant has been in operation. Some of these have come from points outside the state.

Interviews with individual workers by a TEXTILE WORLD editor revealed strong enthusiasm for the working conditions. Employees interviewed generally felt that the clean, bright atmosphere tended to lighten work, to make it a pleasure to come to work, and to be better for their own health.

Some materials-handling equipment is in use at the plant. Skid platforms and a hand lift truck are currently being used to carry heavy parts to the machine shop for modification. A warp-beam truck made by J. W. Lewis, Spartanburg, S. C., is used to handle warp beams between warpers, racks, and looms.

Production is visually controlled and kept under watch through use of a Product-U-Trol board used by the production manager. This board has a peg for each loom which is placed in the date that its current warp will run out. Separate pegs indicate the style being run, and the status of the next warp to go into the loom, whether it be in raw material, throwing, dyeing, winding, or warping.

GOOD PUBLIC RELATIONS. The Ducharne management has also shown a keen realization of the value of good public relations. Not every textile mill has a champagne-bottle cork in its cornerstone. But this plant does—it got there on the day the plant was turned over to the owners by the Austin Co. Monsieur F. Ducharne of Paris, France, came over to participate in the ceremony and brought along some of Rheims' choicest vintage. The cornerstone was laid during the ceremony in which management, the labor union, and the community participated. Speakers included the head of the local labor union, the mayor of the town, F. Ducharne, Charles Gersbach, president, and other management representatives. Guests included many of the plant's neighbors in the community. The building cornerstone was not the only one laid that day—a sound foundation of public relations that will last for many years was also formed.

Critical Crock Point

(*Continued from page 127*)

creased up to a maximum with an increase in temperature and time in the dye bath after which there was a sharp decrease in depth of the crock. The period during the dyeing at which the material being dyed showed the maximum depth of crock, has been defined as the "critical crock-point."

There was a correlation between the critical point of dyeing and the critical point of crocking. Both of these

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critical points vary from dye to dye and can be changed by the dyeing procedures and pretreatments.

WHY CROCKING? Microscopical studies all showed that the dye which rubbed off was located on the outer parts of the wool fibers. Dyeings that were made to determine the effect of dye concentration showed that as the concentration of the dye was increased the crocks became heavier, and an increasingly longer boiling time was required for the available dye to penetrate and gradually reduce the depth of crock. Any excess of dye which cannot penetrate the fibers within a normal dyeing cycle is easily removed during a crock test. Even well-dyed medium shades produced with acid colors often show some crock. This type of crock cannot be attributed to improper methods of application when the dye is applied by methods which have proved satisfactory over a long period of time.

Electron photomicrographs of the surfaces of dyed wool showed that deposits of dye were on the surface of the fibers before the boil was reached and concentrated in the areas where the scales joined. Apparently, this dye redissolved with time and temperature, either in the wool fibers directly or in the water phase surrounding the fibers and penetration was accomplished. However, some crock was obtained in most cases because not all of the dye redissolved, and some of it remained on the surface throughout the entire dyeing operation. The greater the number of dye particles remaining, the heavier the crock; and this appears to vary with the individual dye and the method of application.

Based on the foregoing, it is easier to understand the reasons for the success of the old, established methods for the correction of crocking faults. These methods generally employ mechanical action, such as squeeze rolls and fulling mills; or agents, such as soaps and alkalies. All of these have a beneficial effect in removing loose dye from materials. Passing through squeeze rolls gives the necessary friction and rubbing effect, while soaps and alkalies redissolve or loosen the adhering unfixed colors and facilitate their removal.

The excessive crocking of fabrics made from continuous-dyed indigo raw stock was greatly reduced by a careful washing after fulling with subsequent washing in the neutralizing process and a run through the Derby dry-cleaning machine after shearing.

TO REDUCE CROCKING. Excessive crocking of certain chrome colors, especially Picramic Brown B, is often experienced if the dye is not properly dissolved at the start of the dyeing operation. An addition of ammonia to the dissolving solution will prevent Picramic Brown B from crocking. However, when ammonia is not used, some of the undissolved dye is exhausted onto the outer parts of the fibers, and crocking results. As an example, when browns which show excessive crocking are woven with white wool and fulled, the brown bleeds off and stains the white. This is easily explained by the fact that rinsing in plain water after dyeing will not remove the water-insoluble dye from the surface of the fibers. However, the dye is readily soluble in soaps and alkalies. It is thus immediately dissolved from the fibers when immersed in such solutions and staining of the white areas results.

Acid sensitive and other unlevel dyeing types have considerable affinity for the wool fiber and exhaust rapidly from strongly acid baths. When this occurs, the dye may be precipitated on the materials, causing surface dyeing and in extreme cases bronziness; consequently a reduction in the normal fastness to crocking occurs. Acid-sensitive dyes should be applied from a dye bath with the pH adjuster near the neutral point. Free acid should be replaced with ammonium acetate or sulphate at the start of the dyeing operation. When the dye bath is exhausted, a feed of well-diluted acetic acid can be made without danger of causing unevenness or poor crocking.

The constitution of the dyes used and the way in which they combine with the fiber also determines to some extent the degree of fastness obtained. Greater care is necessary when fibers such as mohair, alpaca, camel hair, and vicuna are dyed, because they have a greater tendency to crock than wool dyed with the same colors.

Unscoured animal fibers which contain natural or spinning oils also crock excessively when dyed. Dry cleaning such materials greatly reduces or eliminates the crock and demonstrates that clean material is important insurance against excessive crocking.

Vision Standards

(*Continued from page 141*)

tained from these workers were distributed for each plant separately.

Fig. 1 shows the cumulative frequency of workers making each test score. These frequencies are expressed as percentages of the total plant sample scoring at or below each of the indicated test scores. For example, in Plant A, 7% of the workers

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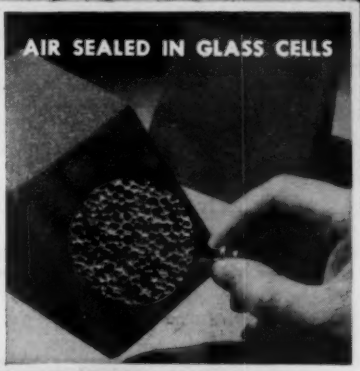

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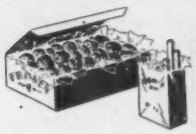	**"RAYAMO"** is a wood cellulose specially developed for the making of cellophane, used increasingly as a protective covering for fruits, vegetables, cigarettes, candy, and numerous other packaged articles.

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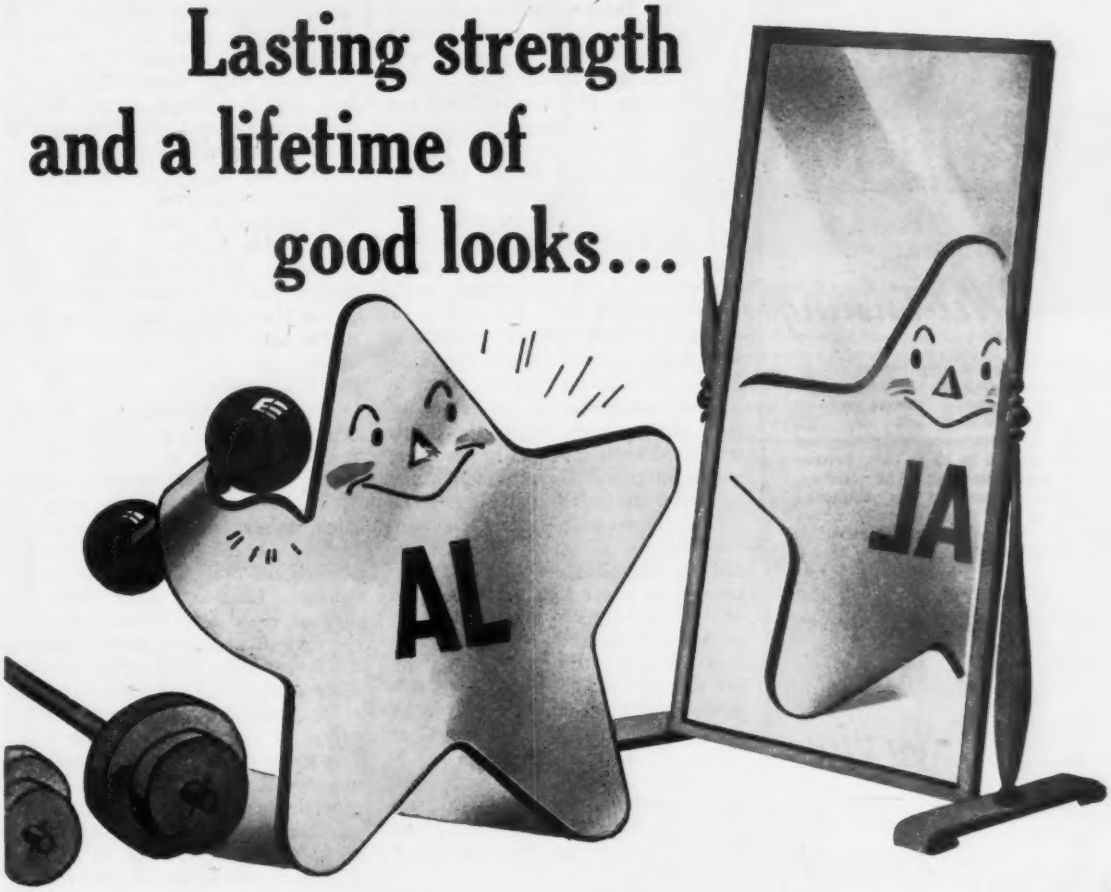

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made a score below 1, 16% made a score below 2, 23% made a score below 3, and so on. It will be seen from Fig. 1 that there is a wide variation among the five different plants in the visual level as measured by near-acuity scores made with the worse of the two eyes. This is particularly true between the test score values of 3 and 9. Whereas in Plant E only 4½% of the workers made a test score below 3, in Plant A 23% of the workers made a test score below 3. Similarly, in Plant E 21% of the workers made a test score below 9, while in Plant A 55% of the workers made a test score below 9. This would indicate a marked variation among the five plants with reference to the visual level of workers on this job.

This difference in general visual level of employees among the plants will be directly reflected in test-score values proposed as minimum visual requirements for this job. If it is assumed, for example, that a maximum contribution to industrial operations can be made by establishing a minimum score which will eliminate 20% of the workers on this single test, marked differences in the score values thus selected will appear among the five different plants. In Plant A this point would occur at the score of 2.6, in Plant B at 7, in Plant C at 7.3, in Plant D at 8, and in Plant E at 9. Thus to isolate the lowest 20% of the workers on this job, the test scores selected on this test will range from 2 to 9 among the five plants here studied.

To approach these figures from another angle, let it be assumed that the test score of 9 or better has been determined as a minimum visual requirement for this job. This requirement in Plant E will isolate 21% of the workers; in Plants B, C, and D, it will isolate from 40 to 43% of the workers; while in Plant A, it will isolate 55% of the workers. Thus, the effect of any established cut-off score will vary widely from plant to plant.

LEVEL OF VISION CONSIDERED. From a practical point of view, any industrial plant wishes its industrial vision program to identify an adequate but limited number of workers. These must be the workers whose vision is inadequate for the job and whose poor performance is in all probability due to this visual inadequacy. In most instances these percentages would vary from 20 to 40%. Any test which would isolate fewer than 20% would fail to make a discernible contribution to job efficiency. On the other hand, any test which isolates more than 40% would in large industrial establishments bog down the facilities for industrial eye care to the point where the visual program loses its maximum efficiency. It is, therefore, desirable in the practical industrial-vision situation to set up minimum visual requirements which will identify between 20 and 40% of the workers who are the most in need of professional attention.

From the figures presented here on loopers in five plants, it is apparent that minimum visual requirements must vary from plant to plant in order to satisfy this requirement. Minimum visual requirements must follow rather closely the general visual level of the plant population as it is found at the time of the inauguration of the industrial vision program.

This does not mean that the concept of optimum visual requirements for specific jobs is invalidated. It merely means that progress toward the optimum visual level must be taken step by step and must be geared to the practical possibility of making professional eye care available to the workers. Thus in a plant where the original visual level is markedly low, the first visual testing should identify the lowest 20 to 40% of the workers. After professional eye care has been made available to this group for a period of time, usually about 1 yr., a re-study of the worker population may reveal a change upward in the general visual level and the consequent possibility of raising the minimum visual standard in order to identify a second percentage of the population. Thus, year by year, the general visual level of the workers is raised, by bringing up the low scoring workers, until a point is reached where only maintenance of visual skills is desired.

Among those plants where the initial visual level is high, this step-by-step procedure would be less involved and the point of maximum return would be reached sooner. Such considerations emphasize the importance of periodic re-tests of visual skills.

OVER-ALL STANDARD IMPRACTICAL. The data given here on loopers emphasize the impracticability of setting up any over-all concept of "good" vision which would achieve the maximum results of a vision program in industry. Such a concept is impractical, not only in terms of an over-all visual requirement but also in terms of a set visual requirement for a specific job. Similarly, it is apparent that workable visual standards in industrial plants cannot be derived without reference to the statistical analysis of the test scores of the workers. Standards arrived at by observation of

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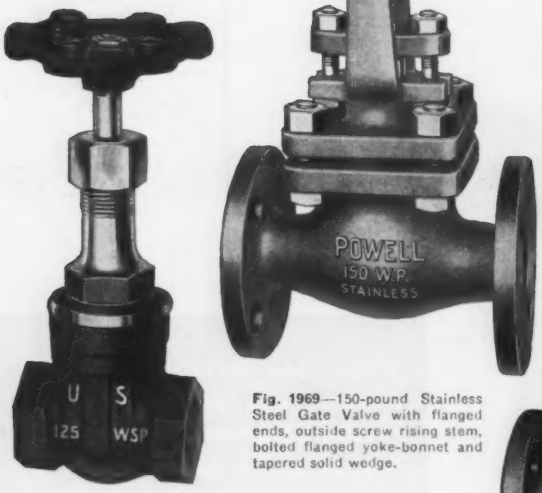

Fig. 1969—150-pound Stainless Steel Gate Valve with flanged ends, outside screw rising stem, bolted flanged yoke-bonnet and tapered solid wedge.

Fig. 500—125-pound Bronze Gate Valve with screwed ends, screwed-in bonnet, inside screw rising stem and tapered solid wedge in sizes ¼" to ¾", inclusive; double wedge in sizes 1" to 3", inclusive.

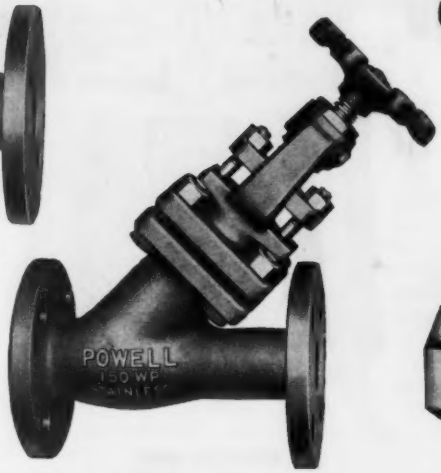

Fig. 2051—150-pound Stainless Steel "Y" Valve. Has flanged ends, bolted flanged yoke, outside screw rising stem and plug type disc.

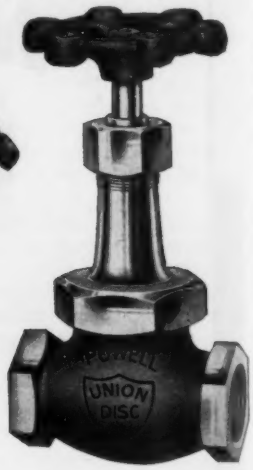

Fig. 150—150-pound Bronze Globe Valve with screwed ends, union bonnet and renewable composition disc.

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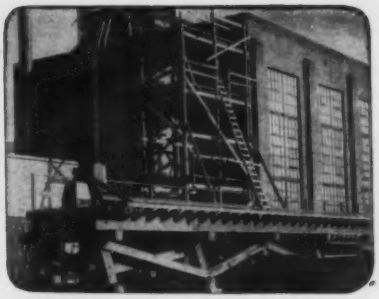

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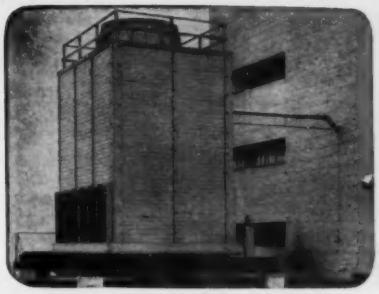
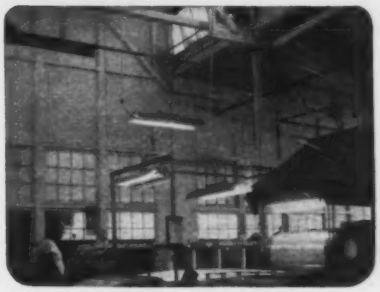
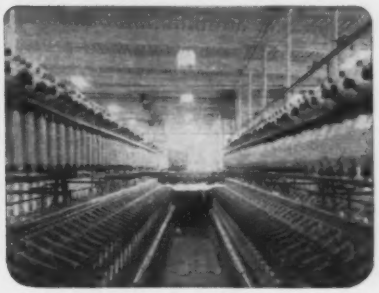


3. Cooling towers and similar structures exposed to direct water contact.



4. Where steam and vapor from industrial processes are prevalent.

5. Wood used in or near the ground open to attack by termites.



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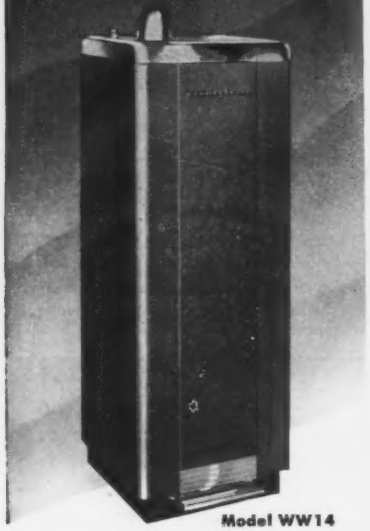

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WATER COOLERS

the job, or by other means not involving such statistical analysis, will raise the same difficulties from plant to plant which result in the case of other generalized standards.

The needs of the textile industry are best served by a specific visual research program based on facts determined by analysis of the visual performance of its own workers[3]. This research program must be specific for each plant involved in the program, and must be "tailor-made" to its need and to its worker population. In addition, such a research program must follow through with each plant, year by year, until a point of maximum return has been reached. It would appear that only through such continuous and repeated fact-finding and re-evaluation can an industry obtain the maximum economic gain from a vision program.

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DYES & CHEMICALS

Rust Rapidogen Color Announced by General

Rapidogen brown IR, a stable azoic compound soluble in alkali, which, after printing and drying, can be developed in acid ageing to form an insoluble pigment possessing superior fastness properties has been announced by General Dyestuff Corp., 435 Hudson St., New York 14, N. Y. The new compound is said to produce on cotton and rayon a desirable rust shade of excellent fastness to light and good all-around fastness properties.

Rapidogen brown IR dissolves readily in caustic soda and has good stability in the print paste. The prints can be developed by conventional acid ageing, or if caustic soda is replaced by developer base RPN in dissolving, they can also be developed by neutral ageing. The product can therefore be printed alongside vat colors.

The neutral developing method has the additional advantage of producing smoother prints on rayon fabrics than the conventional caustic soda method.

Non-Ionic Emulsifiers Unaffected by Hard Water

The Nopco Chemical Co., Harrison, N. J., is now in production on its Nopalcol products, a series of non-ionic emulsifying agents. These surface-active agents are long-chain, ethylene-oxide polymers of fatty acids.

Being non-ionic, the Nopalcol materials are not affected by hard water, salts, or dilute acids which usually cause instability when soaps, sulphated oils, or sulphated fatty alcohols are used. The outstanding feature of these compounds is the flexibility of their chemical and physical properties due to alteration of the length of either the fatty portion or the ethylene oxide polymer.

Vinyl Resin Coating Has Many Useful Properties

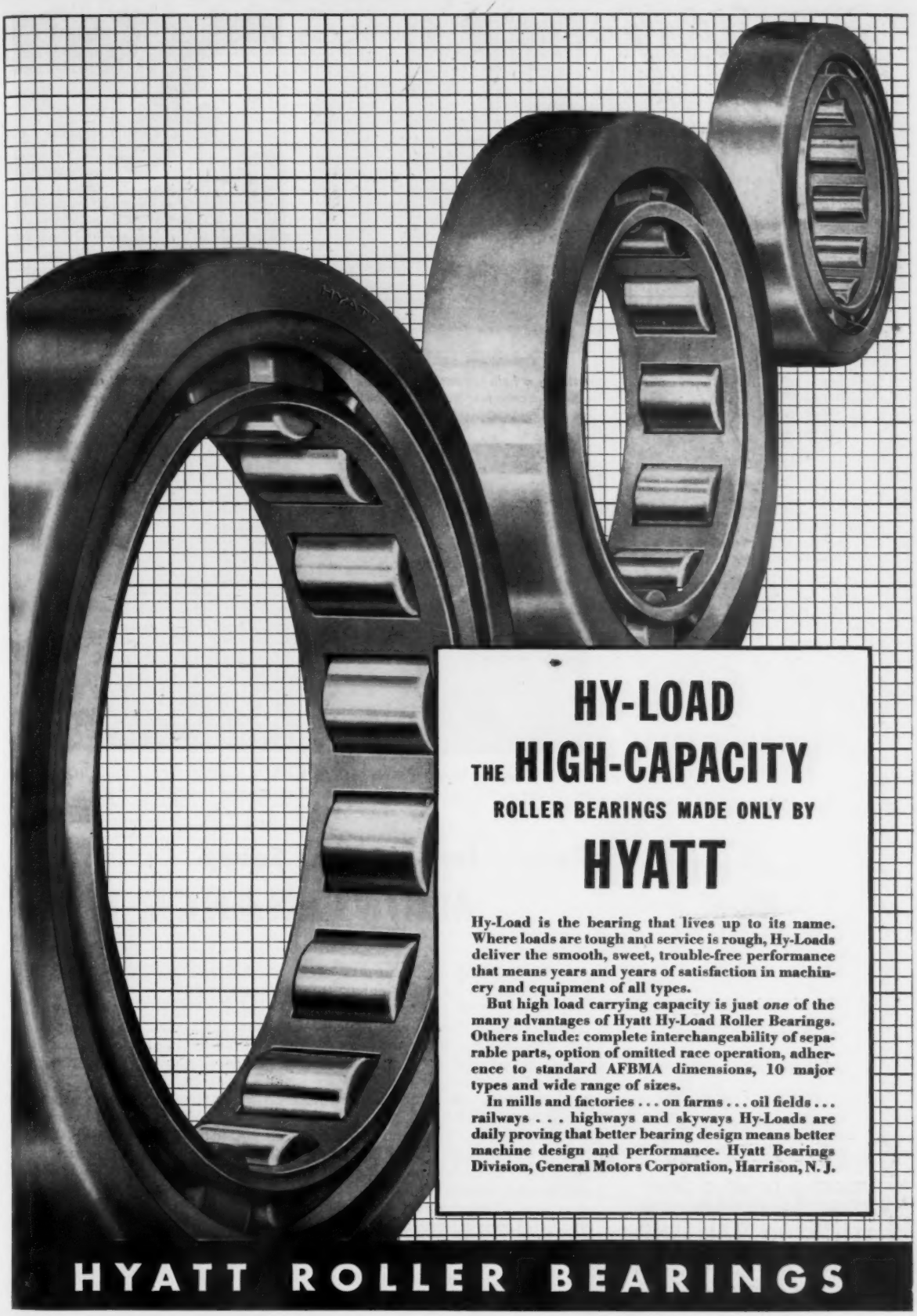
Production of Ultrasol, a new vinyl resin coating combining flame-resisting qualities with exceptional abrasion and weathering characteristics, was announced recently by Monsanto Chemical Co., Merrimac Div., Everett, Mass.

Ultrasol-coated fabrics are similar in appearance to the more common nitrocellulose-treated products. It can impart either a smooth, colorful finish or a decorative leather-like effect. It is equally effective in bright colors or pastel shades.

The manufacturer believes that introduction of the Ultrasol-type coating will allow vinyls to compete with the most economical coating materials. Tests are said to prove the new product's capacity for withstanding abrasion, hard use, and moisture. Ultrasol offers distinct advantages as a surface coating for upholstery, plus upholstered walls, and modern decorative effects. It is highly resistant to alcohol, acids, alkalies, vegetable and body oils.

Fabric with Ultrasol coating will remain flexible at temperatures below 20° F., the manufacturer states.

The new product also, according to the Monsanto tests, will not support flame and when applied to untreated fabrics, it retards burning considerably.



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Hy-Load is the bearing that lives up to its name. Where loads are tough and service is rough, Hy-Loads deliver the smooth, sweet, trouble-free performance that means years and years of satisfaction in machinery and equipment of all types.

But high load carrying capacity is just *one* of the many advantages of Hyatt Hy-Load Roller Bearings. Others include: complete interchangeability of separable parts, option of omitted race operation, adherence to standard AFBMA dimensions, 10 major types and wide range of sizes.

In mills and factories . . . on farms . . . oil fields . . . railways . . . highways and skyways Hy-Loads are daily proving that better bearing design means better machine design and performance. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARINGS

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REELFOOT BRAND

Speeder and ring spun, all sizes to 14's single and plied. Natural or Dyed.

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CUSTOM PUT-UP

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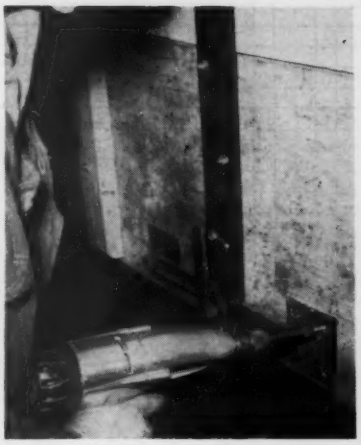
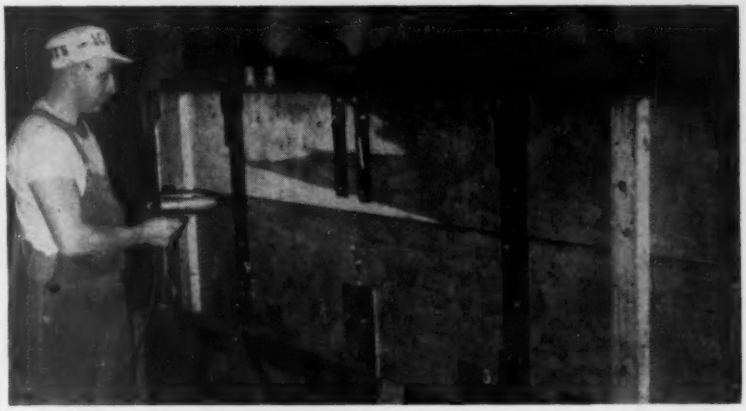


Drilling a hole for one of the many bolts in the dye cage is speeded by use of the tool.

A 3-in. screw is driven and countersunk by the impact tool in repairing a dyehouse truck.



Nuts are placed on 80 ⅜-in. brass bolts in construction of this dye cage. Use of the impact tool on this task alone reduced over-all construction time 30%.

Rotary Impact Tool Saves MAINTENANCE TIME

SAVINGS IN TIME of 30 to 50% in construction and maintenance have been realized at Kent Mfg. Co., Clifton Heights, Pa., through use of the Ingersoll-Rand rotary impact tool.

The impact tool has been used in construction of several dye cages for wool raw stock. On this operation, it is necessary to drill holes in wood, put nuts on 80 ⅜-in. bolts, and drive 48 No. 12 brass screws. Time on these operations, formerly done using a bit and brace, wrench, drill, and screw driver, has been reduced to such a point that over-all construction time for the cages has been cut 30%.

In maintenance of dyehouse trucks, a job requiring driving and countersinking of 3-in. screws, time compared with bit-and-brace methods has been reduced by 50%.

The impact tool has also been used by the maintenance department in driving 1¼-in. black iron screws into maple flooring in the installation of a cloth conveyor.

The Ingersoll-Rand impact tool [TW, July '47, p. 150] runs as any conventional electric tool until the resistance to spindle rotation reaches a certain amount. At this point a patented mechanism converts the power of the motor into 1,900 "rotary impacts" per minute which exert what is claimed to be a more powerful turning effect than is produced by any other electric tool of comparable size. Torque reaction is also eliminated.

MULTI-DUTY—"A" or "B" SECTION

Pitch Diam.		NUMBER OF GROOVES									
"A"-Belt	"B"-Belt	1	2	3	4	5	6	7	8	9	10
3.0	3.4										
3.2	3.6										
3.4	3.8										
3.6	4.0										
3.8	4.2										
4.0	4.4										
4.2	4.6										
4.4	4.8										
4.6	5.0										
4.8	5.2										
5.0	5.4										
5.2	5.6										
5.4	5.8										
5.6	6.0										
5.8	6.2										
6.0	6.4										
6.2	6.6										
6.4	6.8										
6.6	7.0										
7.0	7.4										
8.2	8.6										
9.0	9.4										
10.6	11.0										
12.0	12.4										
13.2	13.6										
15.0	15.4										
18.0	18.4										
19.6	20.0										
24.6	25.0										
29.6	30.0										
37.6	38.0										

BORE RANGE
½" TO 4"

"C" SECTION

Pitch Diam.	NUMBER OF GROOVES										
	1	2	3	4	5	6	7	8	9	10	12
7.0											
7.5											
8.0											
8.5											
9.0											
9.2											
9.4											
9.6											
9.8											
10.0											
10.2											
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11.0											
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14.0											
16.0											
18.0											
20.0											
24.0											
30.0											
36.0											
44.0											
50.0											

BORE RANGE
½" TO 5"

"D" SECTION

Pitch Diam.	NUMBER OF GROOVES									
	3	4	5	6	7	8	9	10	11	12
12.0										
13.0										
13.5										
14.0										
14.5										
15.0										
15.5										
16.0										
18.0										
22.0										
27.0										
33.0										
40.0										
48.0										
58.0										

BORE RANGE
1" TO 6"

IMMEDIATE SHIPMENT from STOCK

Wood's

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IN SIZES INDICATED

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Books of Interest

For Rayon on Cotton System

SPINNING RAYON STAPLE ON THE COTTON SYSTEM; American Viscose Corp., 350 Fifth Ave., New York 1, N. Y.; 148 pages.

This is a basic and well illustrated handbook. The textile research department of American Viscose Corp. at Marcus Hook, Pa., has compiled the technical data accumulated by the corporation through thousands of studies since it began producing rayon staple. The resulting book contains much detailed information of importance to fabric designers and processors as well as to spinners. It gives machine settings and other data for picking, carding, drawing, and spinning rayon staple and blends of staple with other fibers. Charts, photomicrographs, and other views illustrate procedures at each step. There are chapters on the general properties and physical characteristics of Avisco rayon staple; on the various types and sizes made; on weaving spun-rayon yarns; on stock, yarn, and piece dyeing, on printing spun-rayon fabrics, and a table gives specifications for weaving 31 standard fabrics from challis to suitings.

Wool Handbook Brought Up to Date

AMERICAN WOOL HANDBOOK (Second Edition), by Werner von Bergen and Herbert R. Mauersberger; Textile Book Publishers, Inc., 303 Fifth Ave., New York, N. Y.; 1,066 pages, $8.00 in U.S. and Canada, $9.00 elsewhere.

This is a second, enlarged edition of the American Wool Handbook, first published in 1938. The new edition has been revised and enlarged to bring it up to date and it carries 175 additional pages of text. Twenty specialists in various phases of the business collaborated in its preparation over the last two years.

In addition to the thorough treatment of basic material in the book, several flow sheets on yarn manufacture and dyeing and finishing processes have been added in the new edition. Separate chapters have been devoted to the chemical properties and the marketing of wool, to the manufacture of carpets and rugs, to woven and nonwoven felts, and to a complete bibliography. Various methods of shrink-resistant treatments are covered. Continuous solvent degreasing of wool and continuous wool-grease recovery are described. New twist tables for woolen and worsted yarns are included. New yarn-spinning processes are covered in detail. The Wool Labeling Act and new tariff schedules are touched upon. Many new photomicrographs, machinery pictures, and other illustrations have been added. Marketing of wool and futures trading in wool and wool tops have been given greater attention.

Dramatic History of Cotton Through the Ages

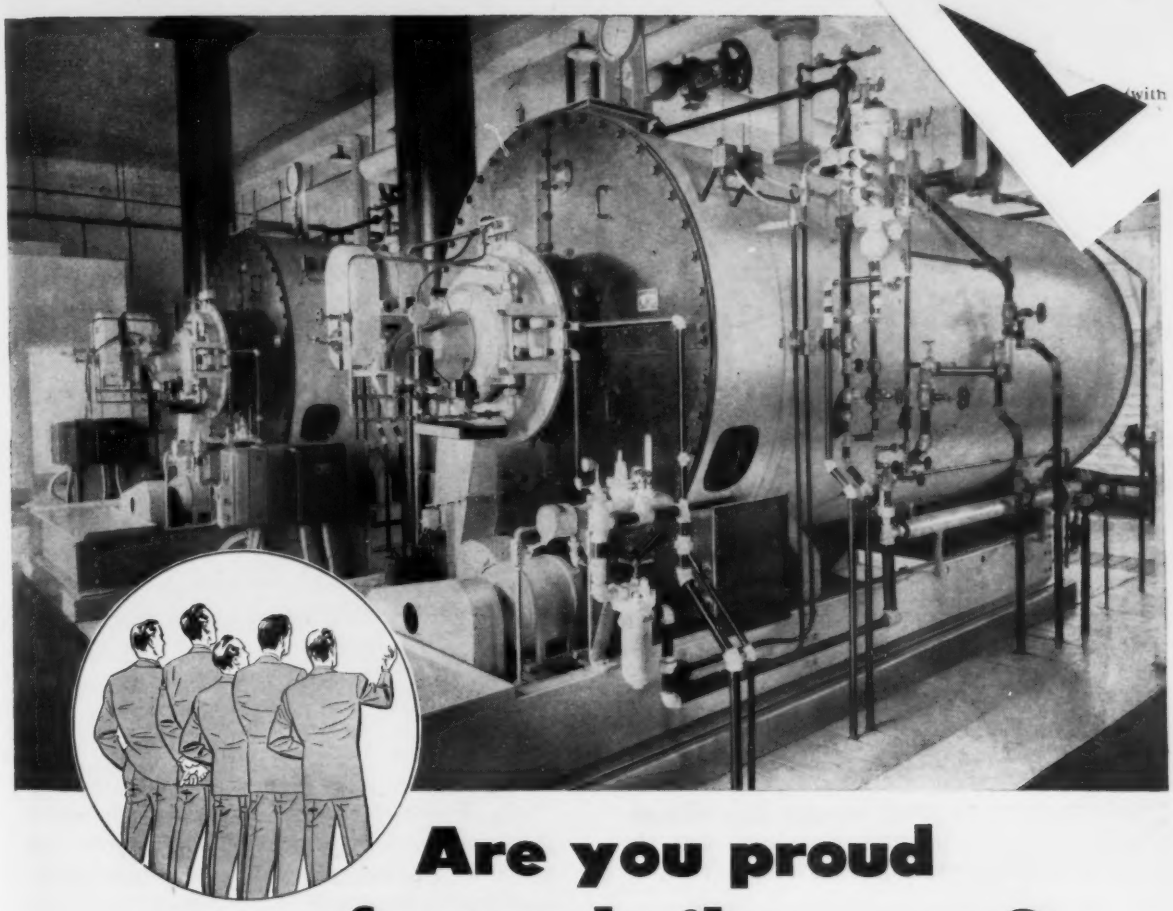
HERITAGE OF COTTON, by M. D. C. Crawford; Fairchild Publishing Co., 7 East 12th St., New York 3, N. Y.; 352 pages, $3.00.

This dramatic, historic story of cotton, first published in 1924, has been revised and reissued. The volume outlines the evolution of the fiber out of the culture of primitive people as far back as 800 B. C., and traces its subsequent development through its machine age in England and North and South America to its cultivation and manufacture in the United States. Mr. Crawford has brought his original work up to date by the addition of a 50-page chapter, entitled "In Retrospect." This chapter outlines the nature of the more important changes which have taken place during the last 24 yr. as regards cotton, particularly in the American scene.

A Complete Handbook on Lighting

IES LIGHTING HANDBOOK; Illuminating Engineering Society, 51 Madison Ave., New York 10, N. Y., 850 pages, $7.50.

In simple terms and condensed style this handbook summarizes the accumulated knowledge of the last 41 yr. of lighting progress, evaluated and interpreted with respect to current needs by a qualified group of over 100 contributing specialists. The alphabetical index provides means for locating subjects and the literature references at the end of each section may be used to amplify the condensed handbook treatment. To aid in com-



Are you proud of your boiler room?

Cleanliness and efficiency usually go hand in hand. Replace your old inefficient, unsightly steam plant with a modern Cleaver-Brooks "packaged" steam generator. Its modern design, its well integrated construction — its clean, smokeless efficient operation (no ashes, dirt or soot to contend with) assure a show place boiler-room like the one illustrated above.

There are more "packaged" Cleaver-Brooks steam generators serving a wider range of steam needs than any other make. Cleaver-Brooks units have been serving all industry for more than 15 years. Check your operating budget — do your steam costs seem excessive? Cleaver-Brooks will be glad of the opportunity to work with you to see if they can be profitably and substantially lowered. Remember, Cleaver-Brooks can help you plan your steam generation needs to meet not only current loads but to provide for future expansion as well.

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- Factory-finished and tested—a "packaged" unit meeting all code requirements.
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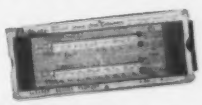

WRITE on your business letterhead for Free Steam Cost-Calculator — a ready-reference slide rule showing the comparative steam costs when using oil, gas or coal as fuel.

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eries of messages to help you increase your understanding of business paper advertising, and its effect on your business.

Ever hear of a salesman who knew how to sew?

SEEMS THERE WAS a young salesman who took a job with a company that makes electric blankets. He figured he could sell those blankets a lot better if he knew how to *make* one.

So he spent enough time in the factory to learn every step in their manufacture—cutting, wiring, sewing and all. The experience proved so valuable that today the company requires every salesman to *make* one of the blankets he sells.

That sounds like such a good idea that maybe it could work *both ways*. Let the *production man* learn something about how they sell what he makes. The result should be a better job in both departments, for producing and selling have one important thing in common. Both thrive on *mechanization*.

In the manufacture of a sale, for example, it usually takes five separate operations to find a prospect and convert him into a customer. To expect the salesman to perform all five would be like manufacturing the product itself entirely by hand—slow and far too costly.

So the salesman depends on a *machine* to take over part of his selling job. Finding prospects, arousing their interest, creating a preference for his company's product or service—all these operations must be *mechanized* if sales are to be manufactured at a profit.

Advertising is the machine that puts selling on a mass production basis. And in the business press—with its tremendous concentration of hand-picked readers—the machine operates at its *highest efficiency*.

Just how efficiently does business paper advertising work? If you'd like to see some examples, we'll be glad to send you a recent ABP folder on actual results. Also, if you'd like reprints of this advertisement (or the entire series) to show to others in your organization, you may have them for the asking.

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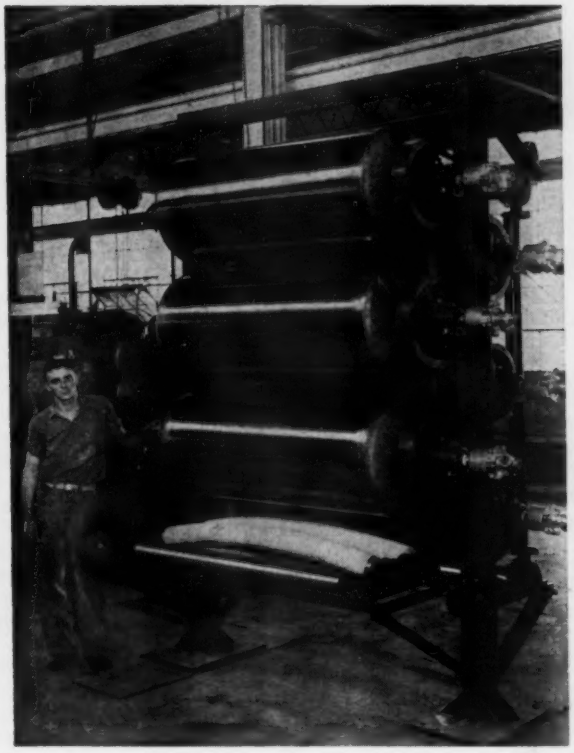
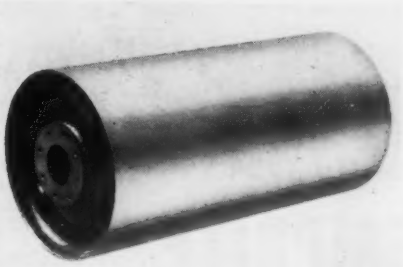
UNISTEL

STAINLESS STEEL DRY CANS





A Can Dryer is only as good as the individual can.

Unistel cans are rugged all welded construction with heavy gauge stainless steel shells and reverse dished pressed steel heads, constructed in accordance with the A.S.M.E. Code and stamped for 35# working pressure. Calculated bursting strength 320# — yet a 50" face can only weighs 215#.

Unistel Can Dryers have sprocket and roller chain transmission; ball bearing journals, both self-aligning, fixed one end—expanding the other end; carrier rolls of stainless steel mounted on ball bearings; frame structural steel with welded base.

Engineers — Designers — and Builders of Back Dryers, Can Dryers, Slashers, Kettles, etc.

UNITED STEEL of AMERICA, INC.

30 ROCKEFELLER PLAZA
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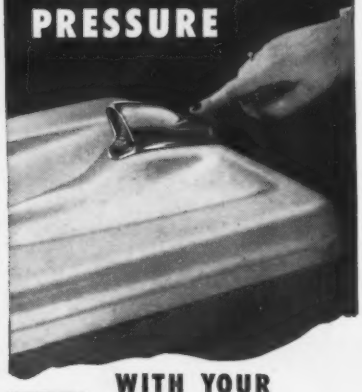
Canadian Representatives: United Steel Corporation Ltd. of Canada, Toronto

EASY

FINGER-TIP PRESSURE



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TEMPRITE

DRINKING WATER COOLERS

1. Instant, effortless finger-tip pressure. 2. No spouting, no splashing, no annoying fluctuations in water flow. 3. Bubbler design gives maximum sanitary protection. 4. Temprite patented cooler assures a constant, even water temperature. Never too cold, never too warm. 5. Streamlined stainless-steel top.

All models meet the requirements of the National Bureau of Standards, U.S. Dept. of Commerce. Approved by Underwriters' Laboratories, Inc.

Write for name of your nearest distributor.

Manufacturers to the refrigeration industry since 1929.

TEMPRITE PRODUCTS CORP.

37 PIQUETTE AVE. DETROIT 2, MICH.

pleting lighting installation plans, detailed data on many types of commercially available lighting equipment are included in the Manufacturers' Data Section. Coverage is complete on all varieties of lighting, and tables, charts, and photographs are generously scattered through the text.

One Hundred Years of Machinery Manufacture

HERITAGE OF DEPENDABILITY—1847-1947; James Hunter Machine Co., North Adams, Mass.; 72 pages.

James Hunter Machine Co. has issued an 8¼x11¼-in. clothbound book entitled, "Heritage of Dependability —1847-1947," commemorating its 100th anniversary. Beginning with a history of the company, the book discusses the modern facilities and personnel of the organization. It is profusely illustrated, contains early pictures of the plant and personnel together with full coverage of the present plant departments and executives.

Business Man's Atlas

ENCYCLOPAEDIA BRITANNICA WORLD ATLAS, Trade Edition; C. S. Hammond & Co., 88 Lexington Ave., New York 16, N. Y.; 154 pages, 16¼x12½ in., $15.00.

A useful feature of this new edition of a recognized atlas is the complete A to Z index of the 100,000 names of cities, towns, and other geographic features appearing in the maps. Numerous "air age" projections give air-route distances between all important world centers. Physical and climatic conditions, vegetation, population, transportation, etc., are indicated on world maps. The separate states are given in unusual detail with railroads and waterways clearly shown.

A Worldwide Directory

SKINNER'S COTTON TRADE DIRECTORY OF THE WORLD, 1947-48; Thomas Skinner & Co., Ltd., Manchester, England (New York office, 1 Broadway); 1,342 pages, $7.50.

This is the 24th edition of this comprehensive directory. It includes raw cotton dealers, cotton spinners and weavers, yarn and fabric finishers, and rayon producers in all the principal counties of the world. In addition, the volume lists textile associations and includes statistical tables on cotton, as well as some useful manufacturing data. The book closes with 124 pages on British, Canadian, and U. S. textile trade marks; and 247 pages of classified mill supplies.

Mill Maintenance

Follow These Tips To Avoid Electrical Shock

It is generally known that to touch both sides of an electrical circuit results in a shock. It is not so well known that injury or death often results from touching only one electrical conductor. A person's body can become a path over which current flows to a ground, according to information released by Associated Factory Mutual Fire Insurance Cos.

Low-voltage systems, such as light and power systems of 110 and 220 v., cause more injuries and deaths than high-voltage systems. This fact no doubt is due to the more extensive use of low voltages and the handling of low-voltage equipment by persons uneducated in electricity.

Grounded systems, such as lighting systems, account for most shocks. One of the electrical conductors is usually grounded at the point where it enters the building. Unless a person is well insulated from a possible ground, it is dangerous to touch the live side of the circuit.

If the system is ungrounded, as in the case of a three-phase power system, a leak from one of the three conductors to a ground makes the system dangerous. If a person touches either of the two leak-free conductors, he will receive a severe shock or burn.

In the case of high voltages, direct contact with a conductor is not necessary. The current may jump from the equipment to a person nearby. This danger is increased if the floor or the person's shoes are wet.

The following precautions cover either low- or high-voltage systems:

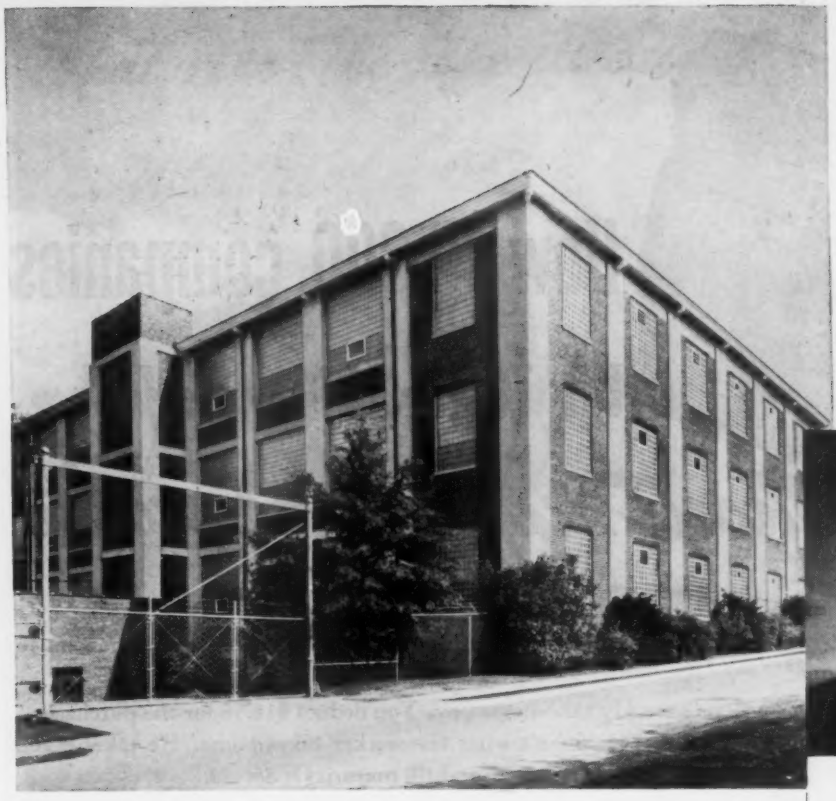
1. Do not go near electrical equipment if the floor or your feet are wet or if your body is moist from rain, perspiration, etc.

2. Do not go near high-voltage installations unless you are accompanied by a competent guide.

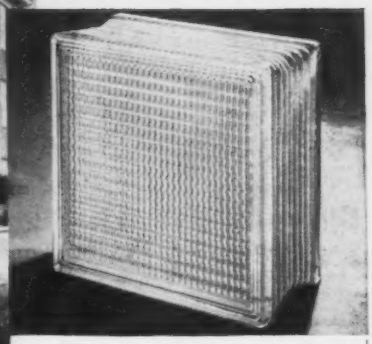
3. Stay out of confined areas at the back of switchboards with exposed terminals and bus bars.

4. If you use portable electrical equipment, see that it is well grounded.

5. Do not use ordinary extension cords in damp locations.



Insulux Glass Block panels (with clear-vision inserts and fan vents) mean superior daylighting for Wiscassett Mills Company, manufacturers of Cannon Nylon Stockings, Albemarle, N. C. Insulux aids close temperature and humidity control.



INSULUX
GLASS BLOCK
AMERICAN STRUCTURAL PRODUCTS COMPANY
Subsidiary of
OWENS-ILLINOIS GLASS COMPANY

How Insulux Glass Block helps the textile business

IT'S NO accident that many of the country's leading textile manufacturers are installing Insulux Glass Block. Insulux has proved itself superior to ordinary window and sash in a high percentage of textile operations.

Insulux Glass Block offers advantages to the textile business which no other form of fenestration can bring. Check these facts:

1. **Insulux Glass Block has a high insulation value—this means more uniform temperature control, less condensation during cold weather.**
2. **Reduces maintenance costs—no painting.**
3. **Insulux transmits and distributes daylight to plant interiors.**
4. **Insulux practically eliminates infiltration, helps keep plant air dust-free, and eases the job of humidity control.**

Investigate for yourself the qualities which make Insulux Glass Block the perfect form of daylighting for textile mills. Consult your local Insulux dealer or send coupon today for free booklet. It contains complete information on many successful Insulux Glass Block applications.

• • •

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P.O. Box 1035, Dept. E-204
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Gentlemen:

Please send me your free 36-page booklet entitled, "Daylight in Industrial Buildings."

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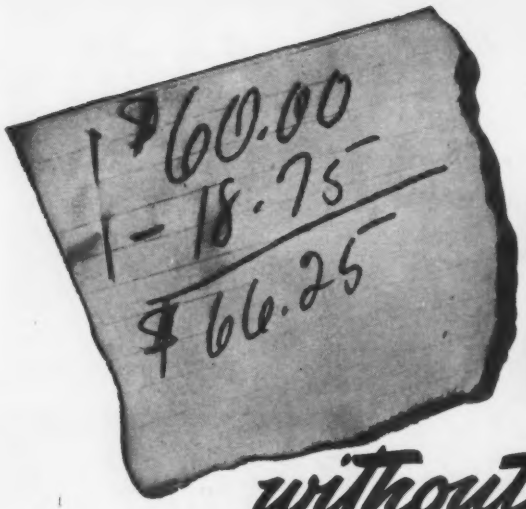
Firm Name_____

City_____ Zone_____ State_____



How 19,000 companies up take-home pay *without upping payrolls*

Can you deduct $18.75 from $60.00 and get $66.25? *Yes.* And the way you can do it is mighty important to your company—and to the nation!

You start with $60, representing someone's weekly take-home pay. You deduct $18.75 for the purchase of a U.S. Savings Bond. That leaves $41.25. But $41.25 isn't what the worker takes home. He takes home $41.25 *plus a $25 Savings Bond.* Total (assuming he holds the Bond till maturity): *$66.25.*

WHAT 19,000 COMPANIES HAVE LEARNED

In the 19,000 companies that are operating the Payroll Savings Plan for the regular purchase of Savings Bonds, employees have been more contented in their jobs—absenteeism has decreased—even accidents have been fewer!

Those are the "company" benefits the Plan provides, in addition to extra security for individual employees.

But the Plan has other, far-reaching benefits of basic importance to both your business and the national economy...

SPREADING THE NATIONAL DEBT HELPS SECURE YOUR FUTURE

The future of your business is closely dependent upon the future economy of your country. To a major extent, that future depends upon management of the public debt. Distribution of the debt as widely as possible among the people of the nation will result in the greatest good for all.

How that works is clearly and briefly described in the free brochure shown at the right. Request your copy—*today*—from your State Director of the U. S. Treasury Department's Savings Bonds Division.

ACTION BY TOP MANAGEMENT NEEDED

The benefits of regular Bond-buying are as important today as ever—but war-time emotional appeals are gone. Sponsorship of the Payroll Savings Plan by a responsible executive in your company is necessary to keep its benefits *advertised to your employees.*

Banks don't sell Savings Bonds on the "installment plan"—which is the way most workers prefer to buy them. *Such workers want and need the Payroll Savings Plan.*

Those are the reasons why it's important to make sure that the Plan is adequately maintained in your company.

The State Director will gladly give you any assistance you wish.

"The National Debt and You,"

a 12-page pocket-size brochure, expresses the views of W. Randolph Burgess, Vice Chairman of the Board of the National City Bank of New York—and of Clarence Francis, Chairman of the Board, General Foods Corporation. Be sure to get your copy from the Treasury Department's State Director, Savings Bonds Division.

The Treasury Department acknowledges with appreciation the publication of this message by

TEXTILE WORLD

This is an official U.S. Treasury advertisement prepared under the auspices of the Treasury Department and the Advertising Council

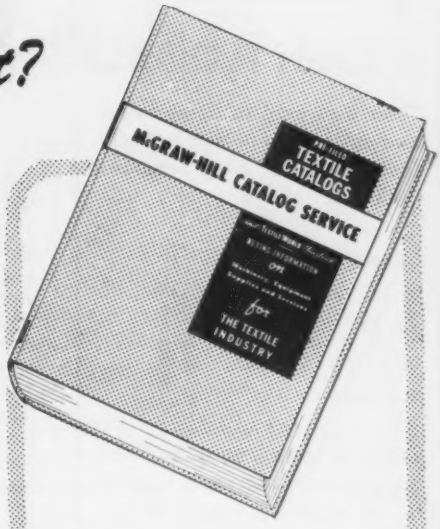
What Are The Specifications?

Who Makes It?

Where Can I Buy It?

. . . Here's the Mill Man's

ANSWER BOOK



In America and around the world — from Australia to Yugoslavia — TEXTILE CATALOGS are the standby of thousands of mill men who seek concise, pertinent product description and sources of supply for the following equipment, materials and services:

1. PREPARATORY, SPINNING AND TWISTING EQUIPMENT
2. WINDING, SPOOLING AND WARP PREPARATION EQUIPMENT
3. LOOMS AND WEAVING ACCESSORIES
4. KNITTING MILL EQUIPMENT
5. DYEING, DRYING, BLEACHING AND FINISHING EQUIPMENT
6. HUMIDIFYING, RECORDING, CONTROLLING AND TESTING APPARATUS
7. MILL SUPPLIES AND ACCESSORY EQUIPMENT
8. CHEMICALS, DYES, SOAPS, SOFTENERS, AND OILS
9. POWER TRANSMISSION, LIGHTING AND GENERAL INDUSTRIAL EQUIPMENT
10. CONSTRUCTION AND MAINTENANCE MATERIALS — PROFESSIONAL SERVICES

***MORE** product data . . . and **FASTER** than from any other source!*

This twenty-fifth edition of TEXTILE CATALOGS contains:

1. Over 300 pages of descriptions, specifications, illustrations and operating data covering the products of manufacturers of equipment and supplies essential to the Textile Industry.

2. A comprehensive Classified Product Directory which lists, by product reference, the names and addresses of *all* recognized sources of supply for mill equipment, supplies, dyestuffs and chemicals. (Includes cross-reference to the catalog pages where more detailed data is available.)

3. Sixty-four pages of valuable information on mill practice, techniques, processes, yarn weights and strengths, conversion tables, sizing procedures, etc. . . . a complete handbook of hard-to-get facts.

If YOU are not now receiving the TEXTILE CATALOGS

and are responsible for specifying or buying equipment and materials at a textile mill, send a request on your company letterhead giving your name and full title. We will send you the current edition.

McGRAW-HILL CATALOG SERVICE

330 West 42nd St., New York 18, N. Y.

How 19,000 companies up take-home pay *without upping payrolls*

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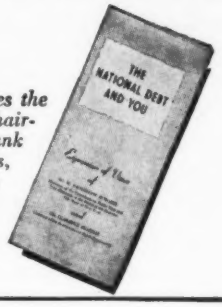

The Treasury Department acknowledges with appreciation the publication of this message by

TEXTILE WORLD

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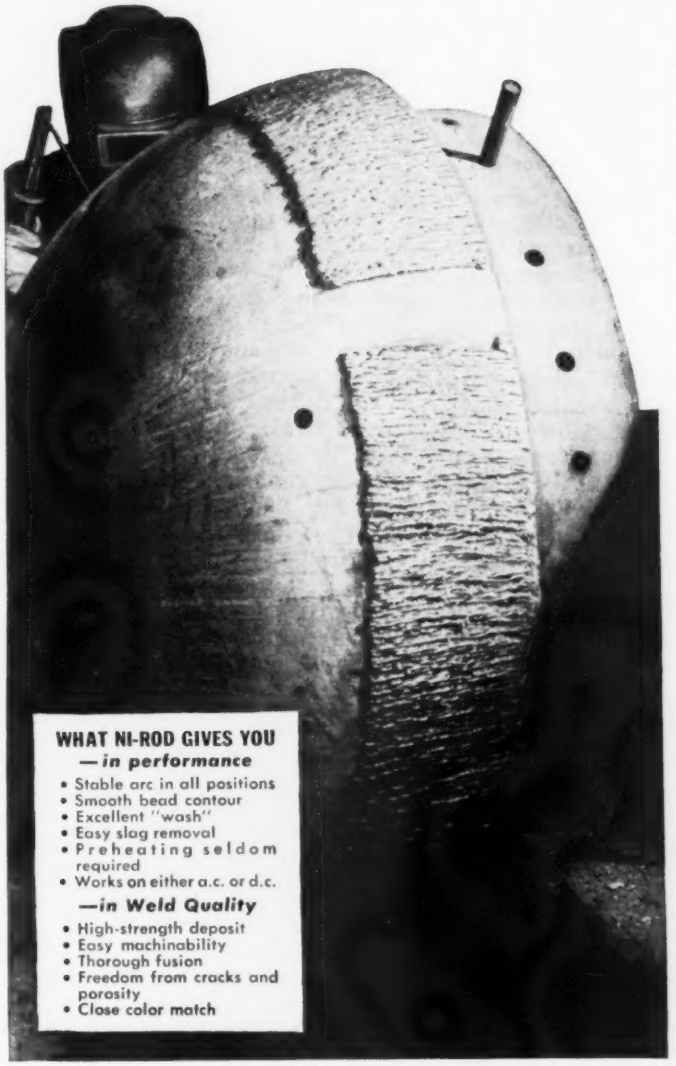
If it's CAST IRON you can weld it with NI-ROD



WHAT NI-ROD GIVES YOU

—in performance

- Stable arc in all positions
- Smooth bead contour
- Excellent "wash"
- Easy slag removal
- Preheating seldom required
- Works on either a.c. or d.c.

—in Weld Quality

- High-strength deposit
- Easy machinability
- Thorough fusion
- Freedom from cracks and porosity
- Close color match

NI-ROD WELDING ELECTRODES SUCCESSFULLY BUILT UP THIS WORN DIE

Dished heads are just one of the products of Lukens Steel Company, Coatesville, Pa.

They're formed with large hemispherical dies. Dies made of cast iron. Dies that are fairly expensive. When one wears down, Lukens' maintenance men try to restore the original contours.

For several years Lukens had used brazing to build up the worn areas. Then they tried Ni-Rod* welding electrodes because of good reports on its strength and easy machinability.

Here's what Lukens has to say about this repair job:

> **"With other wires, it was found that welds would pull loose from the casting when in use. Ni-Rod was the only electrode that could be used successfully. It would not pull loose when in operation, and had a very good wearing quality. We now use Ni-Rod for building up dies to insure good wear and where pressure on the die is involved."**

The welded die (before machining) is shown at the left. Note the smooth layer of Ni-Rod beads. Proof of Ni-Rod's easy handling!

*Reg. U. S. Pat. Off.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

EMBLEM OF SERVICE
INCO NI ROD

TRY NI-ROD AT OUR EXPENSE!

Prove to yourself that Ni-Rod has taken cast iron welding out of the "hit-or-miss" class.

Send in the coupon and get 3 free electrodes. Try 'em on any cast iron job you have. See if they're not the easiest-handling electrodes you ever used to weld cast iron.

Time and time again, Ni-Rod can save you money in repairing damaged iron castings; in building up worn areas; in correcting machining errors; on the production line to join cast iron to steel.

SEND IN COUPON TODAY ➡

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

Gentlemen: I'd like to try Ni-Rod welding electrodes. Please send me 3 free rods of the diameter I have checked.

☐ 3/32" ☐ 1/8" ☐ 5/32" ☐ 3/16"
(Please check *one* size only)

Name .....

Company .....

T.W. 5-48

Address .....

City ..... State .....

They Rate A "Ringing" Cheer

Spinners who use Dary Ring Travelers know the full meaning of ringing cheer. They all cheer these dependable travelers for precision performance around the ring, and acclaim them real winners in every spinning and twisting job.

Dary Ring Travelers earn this applause because they are processed for absolute uniformity and perfect balance. They are finished for that hard, smooth durability than means longer useful life around the ring.

See your friendly Dary Representative. He'll tell you the Dary story more completely. Then, when you try these superior travelers, you'll be cheering DARY, too.

PROCESSED
SYMBOL OF SUPERIORITY

The DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS

JOHN E. HUMPHRIES, BOX 843, GREENVILLE, S. C.
JOHN H. O'NEIL, BOX 720, ATLANTA, GA.
H. REID LOCKMAN, BOX 515, SPARTANBURG, S. C.

dent; A. M. Allen, secretary; Norman E. Elsas, treasurer.

Outerwear Men Meet. The National Knitted Outerwear Association at its 30th annual convention in New York, Apr. 1, heard Morton Savell, managing director of the International Wool Secretariat in North America speak confidently of the future of wool and wool products. Although admitting the sensitiveness of wool prices to world trends, he pointed out that current world production of apparel wool continues to be less than world demand. Morris Philip, Philip Knitting Mills, chairman of the association's technical committee, reported an increasing number of disputes relative to quantity and character of yarns received from spinners and/or dyers. He recommended that members test yarns for moisture and oil content upon delivery from spinner and again after dyeing. Sydney S. Korzenik, executive director of the association, reported that estimated shipments of this branch of the industry totaled $280,000,000 for 1947 and that a sound operating and inventory condition had been reached at the year-end. A. W. Zelomek, economist, spoke on the world economic outlook. Bert E. Green, of Revere Knitting Mills, president of the association, and all other officers were reelected.

Federation Re-elects. At the 75th annual meeting of the National Federation of Textiles, New York, Apr. 1, Henry Neubert, vice president of Deering, Milliken & Co., was re-elected president to serve for the coming year. John Fox, of Fox-Wells & Co.; Alexander F. Ix, of Frank Ix & Sons; and Clinton C. Griffith of Newmarket Mfg. Co., were re-elected vice presidents of the association.

Seminar Discusses Taxation. Beardsley Ruml, chairman of the board of R. H. Macy & Co., Inc., and Harry Rudick of the law firm of Lord, Day & Lord will address the opening session of the Third Annual National Textile Seminar on Monday evening, May 10. Both Mr. Ruml and Mr. Rudick will discuss taxation. The seminar is sponsored by the Philadelphia Textile Institute. This year it is being held at the Shawnee Inn, Shawnee-on-Delaware, Pa., May 10 to 14. Scheduled for discussion are related matters of labor relations, research, exports, and world trade.

OAP to Sell Rayon Firms. The Administration has decided to sell its controlling interest in North American Rayon Corp. and American Bemberg Corp. Assistant-Attorney-General David L. Bazelon, of the Office of Alien Property, has asked engineering firms to apply for the job of surveying the companies—the first step in putting out a stock prospectus for SEC approval. OAP's hesitation over selling the two firms has stemmed mainly from its desire to prevent them from (1) falling into the hands of other U. S. synthetic yarn producers; (2) passing back under German control. It will undoubtedly set up qualifications to forestall this.

LARGE GREENVILLE SHOW FORECAST

OVER 180 APPLICATIONS for space at the 15th Southern Textile Exposition, Greenville, S. C., Oct. 4 to 9, have been received according to Textile Hall Corp. Allotments are being made as rapidly as possible. Preparations are going forward, especially on the subject of housing all the visitors in Greenville that week.

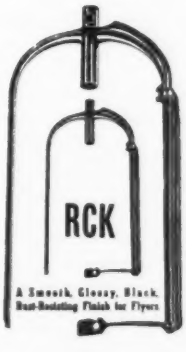
Cotton Council to Meet in California. The eleventh annual meeting of the National Cotton Council will be held in Los Angeles, Calif., Nov. 30 and Dec. 1. Harold A. Young, North Little Rock, Ark., council president, said that the conference on the Pacific Coast would mark the first time the cotton organization has ever convened in the cotton-producing area of the far west. He said that in the future the council probably will hold its annual sessions in the late fall rather than during the winter season.

Debate Graduation Requirements. The New England section of AATCC met Apr. 16 at Lowell Textile Institute, Lowell, Mass., in conjunction with the Student Chapter Section of the institute. A panel of six students debated the subject "Should Cooperative Education Be Developed at Lowell Textile Institute in Such a Manner That Actual Industrial Experience Be a Requirement for Graduation?" This was followed by three papers: "Photographic Aids to the Textile Industry" by Melvin Siegel, a student; "A New Method of Evaluating Water Resistance of Textiles" by Prof. John H. Skinkle; "Fire and Textiles" by Mr. Frank and Mr. Ruffenach, students.

Plans for AATCC Annual. Preliminary plans for the technical program of the AATCC annual convention to be held Oct. 21 to 23 in Augusta, Ga., have arranged five technical meetings; a general technical session on Oct. 21; and four group meetings on Oct. 22. In the morning a hosiery group meet-

Arrow indicates how Ideal changed spindle to mill specifications
Arrows indicate how Ideal changed spindle to mill specifications
Arrows indicate how Ideal changed spindle to mill specifications
Arrows indicate how Ideal repaired whorl and lengthened blade to mill specifications

LITTLE CHANGES MAKE BIG DIFFERENCES *in Quality*



Leading mills are finding they not only save time but improve quality when all spinning spindles and bobbins are uniform in size and style. They are finding, too, that Ideal can *change* their present spindles at a fraction of the cost of replacements. Shown above are a few of the many type spindles Ideal has changed to mill specifications.

If you are having difficulties, due to too many kinds of spindles, Ideal can save you time and money—so why not investigate the possibilities of *standardizing* on your *favorite* type of spindle. Ideal's precision workmanship assures exact conformity to your specifications.

IDEAL MACHINE SHOPS, INC.

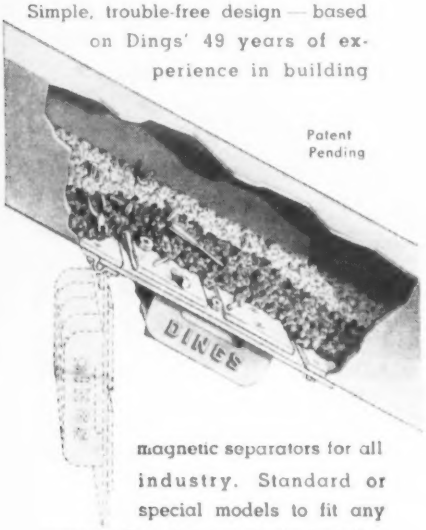
BESSEMER CITY, NORTH CAROLINA

24TH YEAR OF CONTINUOUS SERVICE TO TEXTILE MILLS

A Small Magnet for a **BIG JOB!**

New DINGS ALNICO
PERMA•PLATE MAGNET
For Removal of Tramp Iron

It's the lightest . . . most powerful . . . least expensive Alnico magnet available. Highest grade Alnico . . . magnetic permanence guaranteed for mechanical life of installation! Simple to install in chutes, ducts, pipes and above belts. Non-electric . . . no operating or maintenance expense . . . easy to clean. Removes tramp iron from all dry products — protects machinery . . . prevents fires and explosions caused by tramp iron sparks . . . keeps products iron-free. Simple, trouble-free design — based on Dings' 49 years of experience in building



magnetic separators for all industry. Standard or special models to fit any system. Complete, ready for installation. Quick delivery. *Write for new bulletin.*

DINGS MAGNETIC SEPARATOR CO.
4700 W. McGeogh Av., Milwaukee 14, Wis.

Only manufacturer of a complete line of Permanent and Electro Magnets for every purpose.

"Since 1899"
Dings
"HIGH INTENSITY"

ing and a non-cellulosic fibers group meeting will be held simultaneously, and in the afternoon a cellulosic fibers group meeting and an auxiliaries and testing group meeting will be held.

Grade Up; Staple Down. The grade of the 1947 cotton crop was the highest since 1939 and considerably higher than that of the small 1946 crop, according to USDA reports. However, the staple length averaged somewhat shorter than the 1946 crop.

Subsidy for Cotton in Paper. A program to encourage the use of low-grade cotton, card strips, and comber waste in the manufacture of paper, with a subsidy of 2¢ per lb. to fine-paper manufacturers, has been resumed by the U. S. Department of Agriculture.

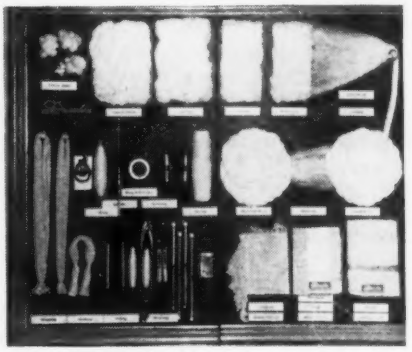
Coaters Institute Changes Name. The association formerly called the Pyroxylin & Resin Coaters Institute, New York, has changed its name to the Plastic Coatings & Film Association. E. A. Claire of Athol Mfg. Co. is president and C. S. Comeaux is executive secretary.

Spindles for Pakistan. KARACHI, Pakistan (*McGraw-Hill World News*) —Installation of 2,500,000 spindles during the next ten years to create a cotton-textile industry in Pakistan has been recommended by a government-sponsored development conference. Under the program 1,000,000 spindles would be installed within five years. Since Pakistan has no textile machinery manufacture, all of this equipment would have to be imported.

Braiders Meet. The third annual meeting of the Braider Group of Cotton-Textile Institute was held at the Providence Biltmore Hotel on Apr. 1 and 2. A. L. Lightner, Narrow Fabric Co., Reading, Pa., was elected chairman and Richard Ward, Shoe Lace Co., Lawrence, Mass., vice chairman.

S. C. Div. of STA Elects. James D. Lybrand, Mills Mill, Greenville, S. C., was elected general chairman of the South Carolina Div., Southern Textile Association, at a recent meeting. R. A. Taylor, Norris Cotton Mills, was chosen general chairman of the state carding and spinning division. Dave H. Roberts, of Spartanburg, continues as divisional secretary. Nat M. Mitchell, head of Barnes Textile Associates, Boston, and John J. Mills, consulting engineer, Greenville, spoke.

Sells Jap Textiles in Asia. Word from Japan via *McGraw-Hill World News* indicates that SCAP has obtained a modification of previous policy in that Japan's textile exports may now be paid for in other than dollar currencies. Netherland's Indies has bought large amount paying half dollars and half guilders. Other Asia countries are about to take 300,000,000 yd. ex-warehouse on similar basis.

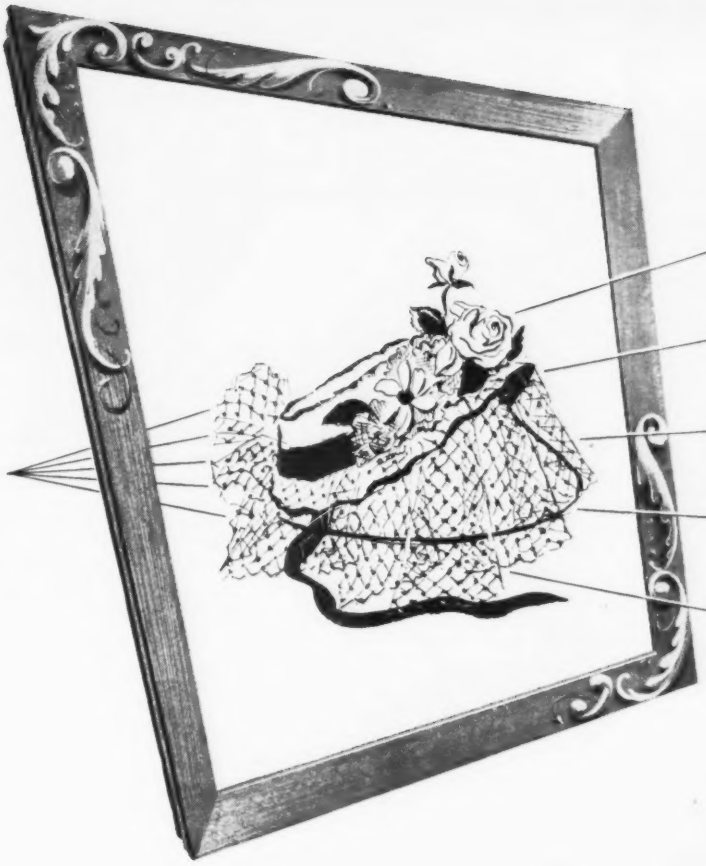


***FLOW-CHART-TYPE DISPLAY** used by James K. Kinkead, production manager of Dundee Mills, Griffin, Ga., at a recent sales meeting in New York to demonstrate steps in quality control of terry towels. Since the display was featured the sales show room in New York, the mill has received numerous requests from department stores to use it. It measures 4x7 ft. and folds for convenience in handling.*

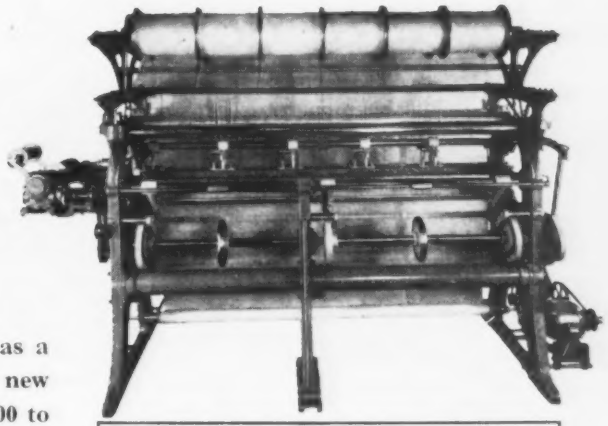
Mid-West AATCC Meets. The spring meeting of the Mid-West Section of AATCC was held at Hotel Schroeder, Milwaukee, Wis., May 1. Dr. H. Luttringhaus, of General Dyestuff Corp., spoke on the "Influence of Chlorine on the Dyeing of Wool". H. F. Clapham, of the E. I. du Pont de Nemours & Co., spoke on "The Dyeing of Spun Nylon, Filament Nylon, and Nylon-Wool Mixtures."

Piedmont AATCC Meets. More than 300 members of the Piedmont Section of AATCC met last month at Winston-Salem for technical discussions. At the hosiery section meeting, J. C. Whitt, Century Hosiery Mills, Burlington, and Rufus K. Smith, Owen-Osborne Mills, Gainesville, Ga., were speakers. P. E. Smith, Riegel Textile Corp, Ware Shoals, S. C.; R. M. Fisher, American Cyanamid Corp., and Ray Pingree, Warwick Chemical Co., addressed the non-hosiery section.

Textile Course at Utica. New York State has established a two-year course in textile technology at the Technical Institute, Utica, N. Y. Under the directorship of Paul B. Richardson and Albert V. Payne, Louis F. Haage, instructor in charge of textile technology, has developed a course especially suited for the needs of the industry.



Are you making NETTINGS *and* VEILINGS?



Consider the High Production Rates Available with the Kidde Knitter

Anything from a 15 denier nylon bridal veiling—sheer as a cobweb—to a rugged laundry bag net can be produced at new high speeds on the *Kidde* Knitter. Speeds varying from 200 to 280 courses per minute—depending on pattern and yarn—are being maintained in mills using this machine.

That's a substantially higher rate of production than has ever been attained on this type of machine before—but it's *typical* of the high, *sustained* speeds possible with the *Kidde* Knitter. A new drum drive, a new motion on needle bars make these speeds possible—and the machine is designed throughout to withstand them.

You'll find the *Kidde* Knitter adaptable to practically any type of yarn, thread or elastic—quickly and easily set up for simple or intricate patterns.

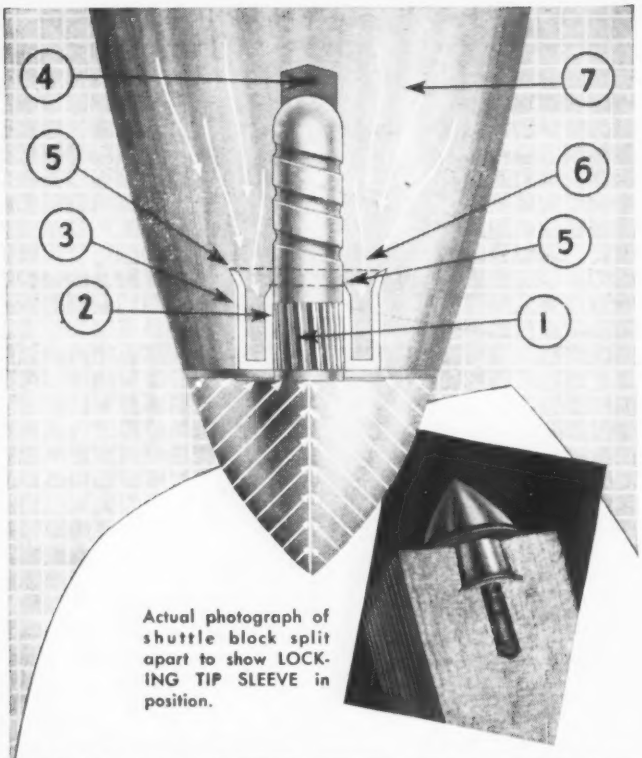
Use the Kidde Knitter on these fabrics too

ELASTIC FABRICS for corsets, girdles, brassieres. DRESS FABRICS. DISH CLOTH MATERIALS. CURTAINS. NARROW FABRICS: edgings, braidings, laces. SHOE CLOTH. KNITTED OUTERWEAR FABRICS for sweaters, polo shirts.

Write for free literature on the Kidde Knitter—or, better still, see for yourself what it can do. A machine is in operation at our Bloomfield plant—write for an appointment for a demonstration.

The word "Kidde" is the trade-mark of Walter Kidde & Company, Inc., and its affiliated companies.

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY



Actual photograph of shuttle block split apart to show LOCKING TIP SLEEVE in position.

ELIMINATE TIP TROUBLE

Loose shuttle tips, the cause of checks and cracks, warp breakage and a threat to the safety of the weaver, are things of the past. This new and exclusive Watson-Williams feature, the LOCKING TIP SLEEVE, anchors tips forever, and insures against loss of production time, idle looms, and costly drawing-ins. Study this Watson-Williams improvement carefully. Request LOCKING TIP SLEEVES on your next order.

1. Straight knurling ¼" long on tip shank.
2. Knurled shank of tip cuts itself into sleeve inner section.
3. Relief in shuttle block .030" larger than sleeve eliminates strain from sleeve expansion.
4. Hole .201" drilled into shuttle block end, with air vent, permits tight fit for tip shank.
5. Bevel of 30° on end of inner sleeve, turned toward center, hugs tip shank and forces wood between inner and outer sleeve. Outward bevel of 30° forces outer sleeve end to expand bell shape and further compress wood, when driven into the solid block.
6. Wood compressed.
7. Grain forced toward center.

Because sleeve is forced into wood, pressure on tip shank increases while shuttle is in service.

WATSON-WILLIAMS MFG. CO.

MILLBURY, MASSACHUSETTS

SOUTHERN REPRESENTATIVES: Watson and Desmond, Box 1954, Charlotte, N. C., John W. Littlefield, 810 Woodside Bldg., Greenville, S. C., Walter F. Daboll, Jefferson Bldg., Greensboro, N. C. WESTERN REPRESENTATIVE: Arthur J. Bahan, P. O. Box 245, LaPorte, Indiana. NORTHERN REPRESENTATIVE: Guy C. Burbank, 32 Beaconsfield Rd., Worcester 2, Mass.

NEWS ABOUT Suppliers

B. F. Perkins & Son, Inc., Holyoke, Mass., has appointed John Lewis Perkins, III, as vice president and general sales manager. This business was founded by his great-grandfather in 1873 and is currently celebrating its Diamond Jubilee.

Crompton & Knowles Loom Works, Worcester, Mass., has appointed Frank D. Lindquist as general superintendent, a newly created post. He joined the company's maintenance department in 1919, later became master mechanic, and recently has been active in the production department.

Crescent Corp., Fall River, Mass., Jacob Ziskind, president, has promoted Leon Bakst to the position on the sales staff formerly held by L. J. Weltman, who is no longer with the firm.

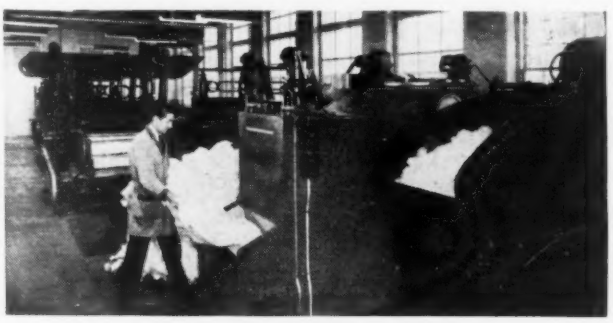
Pneumafil Corp., Charlotte, N. C., has elected Charles R. Harris as president. He was previously vice president and general manager. M. O. Thompson, of Boston, has been named regional manager of the firm's New England branch at 80 Boylston St., Boston. His territory includes New York, New Jersey, and Pennsylvania, as well as New England.

Meadows Mfg. Co., Atlanta, Ga., has recently appointed John R. Caldwell as chief engineer in charge of design and production. Mr. Caldwell was formerly with Southern States Equipment Corp., Hampton, Ga.

American Paper Tube Co., Woonsocket, R. I., has elected Harald L. Amrhein as president and treasurer. Edmond H. Guerin, Jr., was re-elected vice president in charge of manufacturing, and Robert J. Guerin was elected vice president and secretary. The company has placed Dan M. Beattie in charge of all sales in the South. As southern representative, he retains his Greenville headquarters. Samuel F. Adams, working out of Atlanta, continues to represent APT in Alabama, Georgia, Mississippi, and Tennessee under Mr. Beattie's direction.

J. E. Sirrine Co., Greenville, S. C., has elected A. S. Bedell as chairman, and H. L. Hagerman as vice chairman of its executive committee. Members of the executive committee include also George Wrigley, A. D. Asbury, and R. R. Adams.

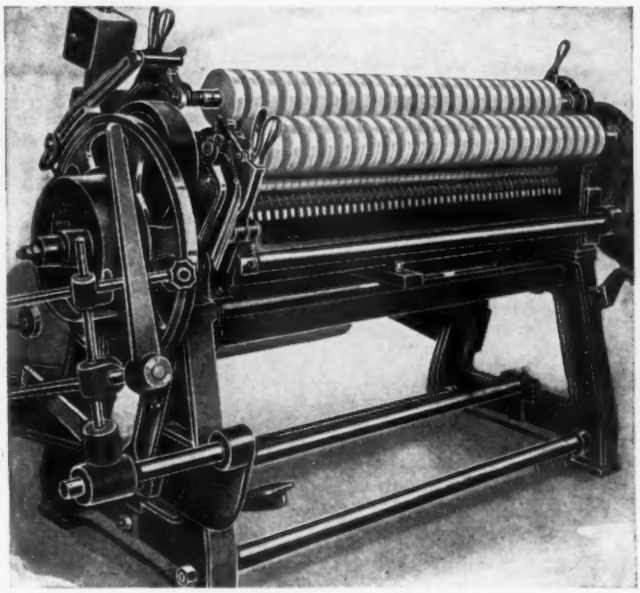
Southern Mill Equipment Corp., Charlotte, N. C., has been appointed distributor in the South for the Charles P.



H & B AMERICAN MACHINE CO., Pawtucket, R. I., has opened new exhibition rooms at its Pawtucket, R. I., plant. The machinery on exhibition is laid out to create what is actually a pilot cotton mill, from the opening and picking machines shown above through spinning and twisting. All equipment can be set in operation in a few minutes time—thus, making it possible to follow the flow of cotton from bale to twisted yarn with each successive operation performed on the latest H & B preparatory cotton machinery. A controlled humidification system has been installed to assure proper atmospheric conditions.

Camachine 26-3A

converts tacky fabrics into narrow rolls with clean edges



Camachine 26-3A is the ideal machine for fast, dependable production of clean-cut *narrow* rolls of all types of impregnated, coated or tacky fabrics and paper. Score-cut slitting tends to seal the cut edges, greatly reducing fraying and linting. The use of two rewind shafts assures *positive separation* of the finished rolls. This machine converts web as wide as 56″ into strip as narrow as ½″ (or ¼″ with special slitters), and produces top quality rewound rolls up to 17¾″ diameter. For complete information on Model 26-3A, and other Camachines for the textile industries, write to:

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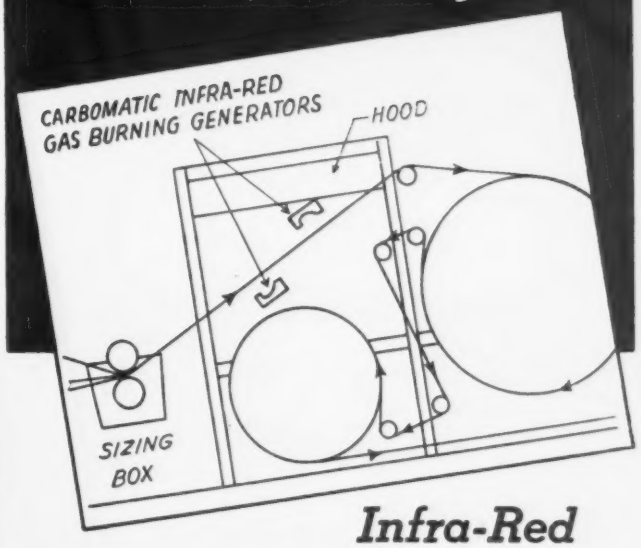

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Increases Production 25-30%

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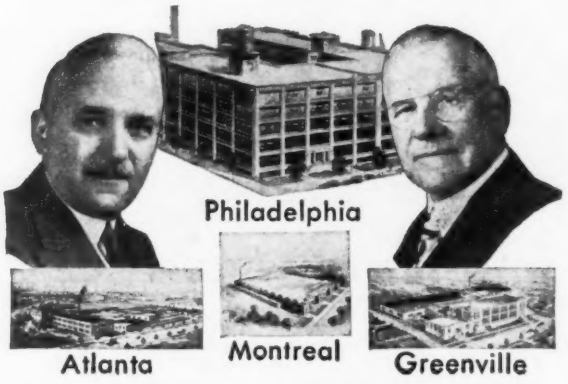

STEEL HEDDLE MFG. CO. is celebrating its 50th anniversary. The general offices and main plant, shown above, are in Philadelphia, Pa. Other plants are at Greenville, S. C.; Atlanta, Ga.; Montreal, Canada. Branch offices are in Greensboro, N. C.; Providence, R. I., and Pawtucket, R. I. J. J. Kaufmann (left) is president and general manager; Robt. J. Freitag (right) is vice president and treasurer. Started in a modest little machine shop in Germantown, Philadelphia, in 1898, the Steel Heddle Mfg. Co. has pioneered in flat steel heddles and loom harness equipment. The flat steel heddle was adopted by practically 100% of the silk industry early in the century. Then came success in the cotton field and the development of the Duplex and doup heddle. Since 1924, came expansion into the rayon field and the advent of the Artex heddle. The company early designed improved frames. With the first silk heddle came the creation of the slide-hook frame. Later came all-metal reeds and the pitch-band type. The company makes a complete line of harness accessories and has developed over 2,000 different kinds of heddles.

Boyd Co., manufacturers of Fidelity-Altemus bottle-bobbin winders, back-winding equipment, and similar products.

Bahan Textile Machinery Co., Greenville, S. C., has started construction of a one-story addition to its plant near Paris Station, which will add more than 40,000 sq. ft. of floor space. The building will be of brick, concrete, and steel construction.

Curran S. Easley, formerly with Louden Machinery Co., and **Hugh Black,** representative of Graton & Knight and Dodge Mfg. Corp., have formed a business association, specializing in materials-handling and power-transmission equipment. Offices and stock room will be at 29 Pendleton St., Greenville, S. C. Other firms represented are: Alvey Conveyor Mfg. Co., Harnischfeger Corp., and Crescent Truck Co.

Fuller Brush Co., Hartford, Conn. — Robert W. Vose, Fuller's director of research and engineering, has been elected a fellow of the Textile Institute, Manchester, England. He is a founder member and first vice president of the Fiber Society.

Drackett Co., Cincinnati, Ohio, has elected Roger Drackett as president to succeed his father, H. R. Drackett, who died Mar. 5.

Methuen Card & Napper Clothing Co., Inc., Methuen, Mass., recently organized, plans operation of plant for manufacture of card clothing. Joseph Sherlock is president.

Price Spindle & Flyer Co., Spartanburg, S. C., textile machinery firm, has been chartered with John Price as president. Capital stock is $10,000.

Interchemical Corp., Textile Colors Div., Fair Lawn, N. J., has appointed Arthur Booth as technical director of its Aridye Dispersions Dept. For the last three years, he has been in charge of research and development work on Aridye pigment colors and clears. The Textile Colors Div. has appointed S. Y. Stribling, III, as technical representative with headquarters at the Rock Hill, S. C., office.

National Starch Products, Inc., New York, N. Y., has elected Herbert C. Piel and Donald D. Pascal as vice presidents. Mr. Piel joined the company's predecessor corporation in 1907. In 1940, he became general manager of the Indianapolis operation of the company, at which point he continues to make his head-

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STOP THEM WITH AMAZING DAMP-TEX ENAMEL

The Damp-Tex system of painting stops rot, rust, bacteria and fungus growth. Puts a porcelain-like finish on wet or dry wood, metal, concrete and plaster with equal ease and efficiency. Damp-Tex resists steam, 2% caustic solution and lactic acid. Comes in white and colors. Used in over 4,000 plants. Send for details of our trial offer.

Canadian Manufacture—Standard Paint & Varnish Co., Windsor, Canada

"Here's What We Want in a Dyebox," *said Textile Dyers*

1. Less time for loading, heating, lacing, doffing, cleaning.
2. Greater saving of steam and water.
3. Production of cleaner, higher quality work.

And Here's the Box We Designed

As specialists in fabricating stainless steel textile equipment, we present this new dyebox for quality dyeing. It assures all the time and money savings that dyers demand in new equipment — all the convenience of an open type box combined with the advantages of a fully enclosed box.

The NEW BLICKMAN DYEBOX

Stainless Steel and Fully Enclosed

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Powerful
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FLOOR MACHINES

fast • thorough • quiet
do **all** types of floor maintenance work on **any** kind of floor.

scrub • polish • resurface
Easily handled, perfectly balanced, with the correct weight and pressure to clean thoroughly and effectively. Supplied in a variety of sizes and with attachments to cover a wide range of applications to exactly meet your requirements. Equipped with sturdy, splash-proof motors.

companion cleaners
When followed by TORNADO Vacuum Cleaner, scraps and moisture are removed and floor can safely be used at once.

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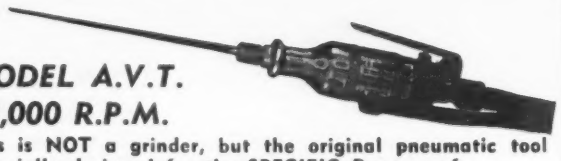

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This is NOT a grinder, but the original pneumatic tool especially designed for the SPECIFIC Purpose of

REMOVING LINT and FLY
from the top rolls and other parts of the drafting elements on
SPINNING FRAMES also ROVING FRAMES

Spindle design permits using PICK (which gathers the fly and lint), 3/16" diameter by 5" long when used on Spinning Frames and 3/16" diameter by 7" long when used on Roving Frames. Exhaust air directed back of roll picker to prevent fly and lint from being blown into yarn when spinning . . . PATENT APPLIED FOR. Weight only 14 oz. Special grease-sealed bearings. No lubrication required.

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Texas, Oklahoma and Arkansas
MATTHEWS EQUIPMENT CO., 93A Broadway, Providence 3, R. I.
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DETROIT 26, MICHIGAN

quarters. Mr. Pascal joined the company in 1929. In 1946, he was appointed technical director and assistant vice president. He will continue to direct the company's research and development program.

Mathieson Chemical Corp., New York, N. Y. (formerly the Mathieson Alkali Works) has elected Thomas S. Nichols as president and chief executive officer. George W. Dolan, formerly president, was elected chairman of the board. A. U. Fox, former chairman, resigned. John C. Leppart was elected vice president. Other officers were re-elected. The change in company name was approved at the same time.

Interchemical Corp., Finishes Div., New York, has appointed Albert J. Capalbo to the sales and technical service staff of its Flexible Plastic Coatings Dept., with headquarters at Elizabeth, N. J. He recently completed two years as chief chemist for the Plasticote Fabrics Corp., Passaic, N. J., formerly manufacturers of coatings for textiles and specialists in vinyls.

Keever Starch Co., Columbus, Ohio, home of Victor mill starch, is celebrating its golden anniversary and is distributing a commemorative booklet which presents a brief history of the Keever business which was incorporated in 1898. All machinery and equipment used for wet starch processing has been, or is being, replaced as rapidly as construction conditions permit, according to Charles C. Switzer, manager of the Keever Textile Sales Div., Greenville, S. C.

Union Special Machine Co., Chicago, has established a new branch plant at Huntley, Ill. This latest step follows less than two years after the addition of three new manufacturing floors to the company's main factory in Chicago.

Brown Instrument Co., Philadelphia—Student capacity, space, and equipment facilities at the Brown School of Instrumentation in Philadelphia has been doubled through the leasing of new and larger quarters consisting of a 4-story building at 5109 Germantown Ave. The school, now in its 14th year, is conducted for training both customer and Brown Instrument service and maintenance engineers.

WILLIAM M. FRASER has been appointed vice president of Glass Fibers, Inc., Waterville, Ohio, in charge of eastern textile sales and engineering. Eastern offices have been established in the Hospital Trust Bldg., 15 Westminster St., Providence, R. I., as service headquarters for textile customers in the north and southeast sections. Mr. Fraser has been long associated with the textile machinery field, having been general manager of H & B American Machine Co., Pawtucket, and since 1938 until he recently resigned, vice president and general manager of Atwood Machine Co., Stonington, Conn.

Industrial Heat Engineering Co., Greenville, S. C., has designated Carl Endlein to handle its equipment in Georgia, Alabama, and Tennessee. He will be working with Cox Foundry & Machine Co. in this territory. Mr. Endlein will also handle the account of Vapofier Corp., Chicago, in the same territory.

Ira M. Valentine, Wieuca Road (P. O. Box 141 Northside), Atlanta, Ga., has established a sales agency to specialize on conveying, materials-handling, and speed-reducing equipment together with related lines.

Diamond Alkali Co., Cleveland, Ohio—The new executive headquarters of Diamond Alkali opened in Union Commerce Bldg., Cleveland, Mar. 22, having been moved from Pittsburgh, where the company has had its offices since 1910.

Stein, Hall & Co., Inc., New York, N. Y., on May 4 marked the 50th anniversary of its Philadelphia office. That office has been under the managership of Elliott I. Stokes during the last 10 yr. Previously for 40 yr., it had been managed by the late Harry M. Saffer. The parent company is 82 yr. old this year. Stein,

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This new handbook spotlights practical methods in spinning—throwing—weaving—knitting—dyeing and finishing

Here are detailed, step-by-step explanations showing you how to handle rayon *on existing or available commercial machinery.* It brings you the most successful methods—the most advanced of accepted practices—in the technologies of all divisions of the textile industry: cotton—woolen—worsted—synthetic—knitting—finishing. It shows you how to make the most practical and efficient use of machines you already have for rayon processing. The material is authoritative and up-to-date. Each section of the handbook was prepared by outstanding technicians and specialists in a particular branch of textile manufacture. Photographs, drawings, diagrams, graphs and tables make it a down-to-earth, easy-to-follow guide.

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Handbook for Textile Mills

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260 *pages*, 81 *illustrations*, $3.75

This handbook makes available to the textile industry a vast store of technical information on how rayon can best be used on equipment developed to handle natural fibers . . . and on the ever-increasing quantity of equipment now available for handling staple or continuous-filament rayon. It provides mill men with the best methods of processing rayon into yarn, greige goods and finishing fabrics. It covers all phases of textile manufacture, including spinning of rayon staple by the three principal systems, and throwing, weaving, knitting, dyeing, and finishing.

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WRITE FOR BULLETINS Nos. 1 and 6

TRICO FUSE MFG. CO. Milwaukee, Wis.

NEWS ABOUT SUPPLIERS

DAYTON RUBBER CO., Dayton, Ohio, has put into full operation its new branch and warehouse, located in the building shown above at 1855-59 Spring St., N.W., Atlanta, Ga. J. M. Hubbard, district sales manager of the company, is in charge. The new location is headquarters for all sales representatives covering the southeastern states. The company warehouses a complete line of industrial V-belts for power-driven machinery from fractional to 1,000 hp.

Hall has appointed Joseph T. O'Neill as sales representative for Texas. He will make his headquarters in New Orleans, at the Stein-Hall office in that city, 413 Pere Marquette Bldg.

Allis Chalmers Mfg. Co., Milwaukee, Wis., has named John R. Queen, for the last 2 yr. Texrope sales representative in the New York district office, to be dealer supervisor at New York for the company's Empire region.

Wyandotte Chemicals Corp., Wyandotte, Mich., has sold a minority holding in Wyandotte stock to The Solvay American Corp., American affiliate of Solvay et Cie., of Brussels. The sale represents no relationship between the two companies other than one of an investment nature, according to E. M. Ford, president of Wyandotte.

Philadelphia Quartz Co., Philadelphia, has appointed Miller E. Barton to its sales staff in the midwest territory. He is residing at Independence, Mo.

The Bristol Co., Waterbury, Conn., is conducting a series of courses for plant instrument and operating men in the theory and application of industrial instruments, including two weeks of intensive lectures and laboratory work, with special emphasis on instrument maintenance and repair. The Bristol Co. has appointed D. C. Faith as sales engineer in charge of its office at 231 Healey Bldg., Atlanta 3, Ga.

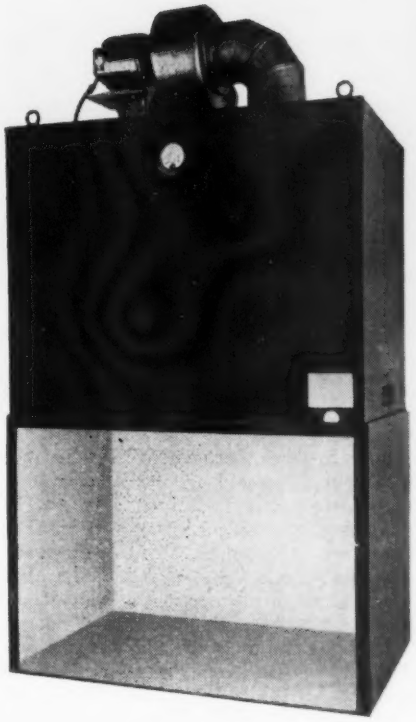
Arnold, Hoffman & Co., Inc., Providence, R. I., has acquired the business of Harkness & Cowing Co., Cincinnati, Ohio, maker of stearic acid, red oil, and crude glycerine. The new Arnold Hoffman unit will continue to serve its present accounts and there will be no changes in its personnel.

Monsanto Chemical Co., St. Louis, Mo., has appointed Dr. Frederic Matthews, of Winchester, Mass., as director of research for the Merrimac Div., Everett, Mass. James A. Wilson, plant manager at the headquarters of the Merrimac Div., Everett, Mass., has been appointed production manager for the division. He is succeeded as plant manager by Russell L. Miller, plant superintendent.

United States Testing Co., Inc., Hoboken, N. J., has established a complete new laboratory to serve West Coast industry at Los Angeles. It is located at 1236 Maple Ave., under the management of F. P. Brennan.

Link-Belt Co., Atlanta Plant, has established a district sales office in Jacksonville, Fla., with headquarters at 137 E. Forsyth St. Robert L. Lowder, formerly district sales engineer at the Link-Belt plant in Atlanta, has been appointed district sales manager in charge of the new office. C. C. Wiley, heretofore district sales manager at Birmingham, has been appointed district sales manager at Baltimore, to succeed H. Merrill Bowman. James Tommie Bell, Jr., succeeds Mr. Wiley. The Ball & Roller Bearing Div. of Link-Belt has appointed Arthur E. Maha as assistant sales manager for the central division, with headquarters at the Dodge plant, Indianapolis. Lewis M. Watkin, Jr., has been named as assistant sales manager for ball and roller bearings in the eastern division, with headquarters in Philadelphia.

MACBETH *Color Matching Skylights*



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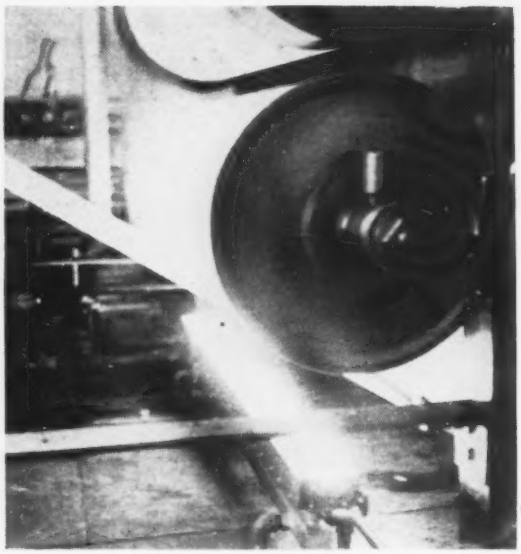

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NEWS ABOUT *Men*

John C. Borden, son of **Gen. Howard S. Borden**, has been elected president of Borden Mills, Inc., Kingsport, Tenn. He succeeds **Bertram H. Borden**, who becomes chairman of board. **General Borden** was elected first vice president; **Arthur B. Borden**, vice president and treasurer; and **William J. Still**, vice president in charge of manufacturing.

Neil W. Ashe has been elected president of Ashe Hosiery Mills, Knoxville, Tenn., to succeed his brother, the late Ragon Ashe. **Ralph Huskey**, formerly superintendent, was made vice president; and **Robert L. Bean**, secretary, was also made treasurer.

Frederick J. Coombs has been appointed chairman of board of directors of Monarch Knitting Co., Ltd., with head office in Dunnville, Ont., filling vacancy caused by recent death of J. A. Burns. **Gordon Hanks**, manager of company's Joseph Simpson division in Toronto, has been named director to fill vacancy in directorate.

Theodore B. Nilsen has been elected president of Clinton Woolen Mfg. Co., Clinton, Mich., succeeding **David O. Hamilton**.

Hans W. Nolde has relinquished presidency of Nolde & Horst Co., Reading, Pa., to become chairman of board.

William Karl has been named president of Firestone Textiles, textile subsidiary of Firestone Tire & Rubber Co., Akron, Ohio. Mr. Karl has been vice president for last 7 yr. and is in charge of textile plants in Gastonia, N. C., Bennettsville, S. C., and New Bedford, Mass. He has been with company since 1919.

William H. Deyo, president of Anniston Foundry Co., Anniston, Ala., has been named chairman of board and treasurer of Anniston Mfg. Co., Anniston, Ala. **W. B. Pennington**, former secretary and office manager, has been made vice president and secretary. Company will continue to operate without president, leaving vacant the position held by the late Fred O. Tyler.

Livingston Kelley, executive vice president of United States Finishing Co., Norwich, Conn., has been elected chairman of board, newly-created office.

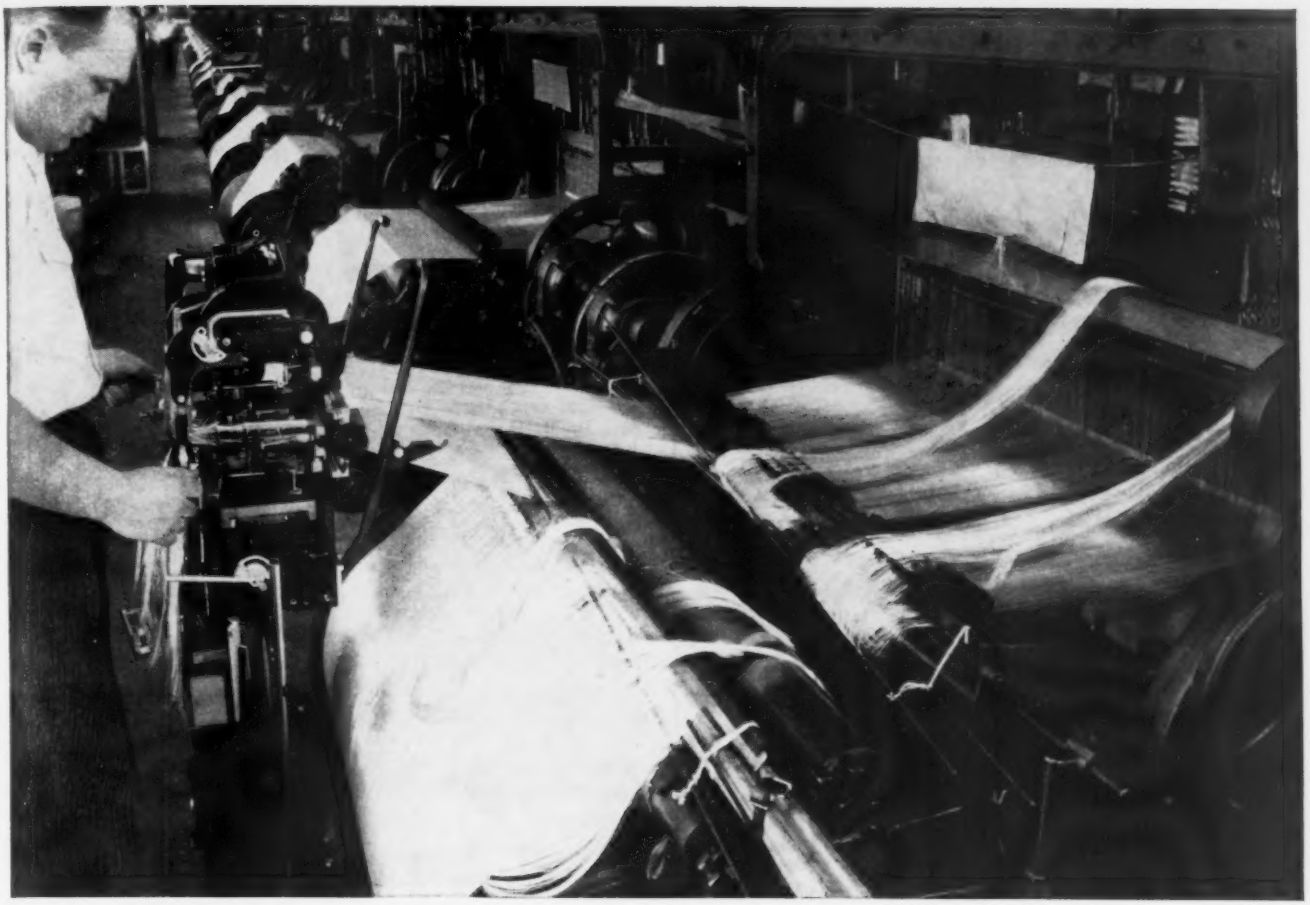
Alexander W. Bell has been elected general manager of manufacturing, assistant vice president, and director of American Yarn & Processing Co., and its subsidiaries at annual meeting of directors in Mount Holly, N. C. He was also elected assistant vice president and director of Holly-Knit, Inc., Holly Mills, Inc., Dean & Sherk Co., and Spun Fibers, Inc. **T. J. Davis**, assistant secretary and assistant treasurer, was named assistant vice president; and **Frank H. McKinney** was named assistant secretary and assistant treasurer. Other officers were re-elected.

S. M. Butler has been named vice president of Glenn Mills, Inc., Lincolnton, N. C., and will devote his time to manufacturing and sales activities.

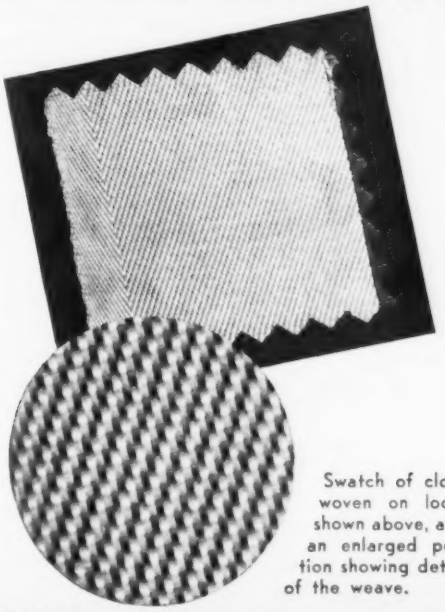
Paul W. Baker has rejoined Holeproof Hosiery Co., Milwaukee, Wis., as vice president in charge of manufacturing of men's hosiery division. He succeeds **Clyde L. Wilkins** who resigned because of ill health. Mr. Baker's headquarters will be at men's hosiery mill in Marietta, Ga.

Sam M. Butler, of Cherryville and Gastonia, N. C., has been elected vice president of Glenn Mills, Inc., Lincolnton, N. C. He will devote his time to both manufacturing and sales activities. Mr. Butler was with Carlton Yarn Mills, Cherryville, in executive capacity for about 15 yr., and prior to that was with Bladenboro Cotton Mills, for 9 yr.

Theodore Friedlander, vice president and general manager of Phoenix Hosiery Co.,



BARBER-COLMAN PORTABLE WARP TYING MACHINE RENEWS WARP IN LESS TIME THAN OTHER METHODS



Swatch of cloth woven on loom shown above, and an enlarged portion showing detail of the weave.

Here is a practical example of the savings to be gained from the use of a Barber-Colman Portable Warp Tying Machine in comparison with hand twisting-in and hand drawing-in. The mill records data below shows that the machine ties in this synthetic warp in 1/3 the time of hand twisting-in and less than 1/8 the time of hand drawing-in. The machine works directly in back of the loom, eliminating any necessity for removing, transporting, and resetting weaving elements. Warps for similar patterns but different color distribution can be tied as well as identical patterns. Machines are made for plain or leased warps, and there is a combination machine that can be changed in a few minutes to tie from either a flat sheet or an end and end lease. See your Barber-Colman representative for specific recommendations to fit your needs.

WARP REPLENISHMENT DATA—FROM THE MILL

Warp: 3770 ends of 150 denier 38 filament Bright Viscose Yarn

Preparation Time	10 min.	Helper	1
Tying-in Time	30 min.	Previous Hand Twisting-in Time	2½ hours
Passing Knots through weaving elements	10 min.		
Total Loom Down Time	50 min.	Previous Hand Drawing-in Time and Loom Gaiting	7 hours
Machine Operator	1		

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

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WARP BEAM for
every application!
Experienced Field Men are at your service
BROAD LOOM BEAMS
★ for Crompton & Knowles Looms
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RIBBON LOOM BEAMS
★ adjustable head with fixed shaft
★ fixed head with removable shaft (not shown)
Get the complete story of Milton's role in the Textile Industry . . . WRITE FOR YOUR COPY OF CATALOG 455 (Steel Beams) OR CATALOG 45-A5 (Light Metal Beams)
SPECIAL BEAMS
MILTON MACHINE WORKS
DESIGNERS - ENGINEERS - MANUFACTURERS
MILTON, PENNA.

NEWS ABOUT MEN

Milwaukee, Wis., has been elected president of company. He succeeds the late Herman Gardner. **Frazier D. MacIver,** vice president in charge of production since 1937, was named executive vice president.

George Bostick has joined Hudson Piece Dye Works, Inc., Paterson, N. J., as vice president.

T. D. Meriwether, has been elected executive vice president of P. H. Hanes Knitting Co., Winston-Salem, N. C. He was formerly vice president and treasurer.

Paul Martin Platzman, formerly with Alexander Smith & Sons Carpet Co., Yonkers, N. Y., has been appointed technical director of Quitman Mills, Inc., Quitman, Ga.

William H. Poisson has been transferred to Greensboro, N. C., plant of Burlington Mills, where he will be connected with quality control department.

Eben E. Whitman has joined spun-rayon division of Burlington Mills Corp., New York, N. Y., in executive capacity. He was formerly associated with William Whitman Co.

Arthur C. Young, Jr., has become manager of standards for Newberry Textile Mills, Newberry, S. C. He was formerly assistant director of standard with Bibb Mfg. Co., Macon, Ga.

Dr. Frederick T. Peirce has resigned as director of research for School of Textiles at North Carolina State College, Raleigh, N. C., because of ill health, and has sailed for his homeland in Australia.

W. W. Rodgers, general superintendent of American Spinning Div. of Florence Mills, and F. W. Poe Mfg. Co., both of Greenville, S. C., has resigned his position with F. W. Poe plant, and will assume full time duties with American Spinning plant.

Thomas E. Goulet has been named superintendent of new package-dye plant of Maplewood Yarn Mills, Inc., Fall River, Mass. Maplewood Yarn Mills has installed entirely modern equipment. In addition to work for its own account, company also will do commission yarn dyeing. Mr. Goulet was former superintendent of dyeing at Atlantic Rayon Corp., and at Woodlawn Finishing Co.

IVAR MOBERG, formerly with Nashua Mfg. Co., Nashua, N. H., a division of Textron, Inc., has joined Fieldcrest Mills, Spray, N. C., in the research and quality-control department. As a development engineer, he will devote a great deal of his time to the Fieldcrest thermostatic blanket. Mr. Moberg is well-known in the textile field as an inventor, technical writer, and instructor. He taught weaving, designing, and textile engineering at Nashua and at Lowell Textile Institute. He wrote a textbook on loomfixing of Draper X-Model looms for International Correspondence School and has written numerous technical articles for TEXTILE WORLD. His loomfixing textbook "Cotton Loomfixer's Manual" is widely used. It first appeared serially in TEXTILE WORLD and was published in book form by McGraw-Hill Book Co. He holds several patents, including an original patent on the electric blanket. He is a native of Sweden and has been in this country since the first World War.

Edwin M. Holt has become general manager of manufacturing at Erwin Cotton Mills Co., Durham, N. C., and will assist **Carl R. Harris,** vice president and assistant treasurer.

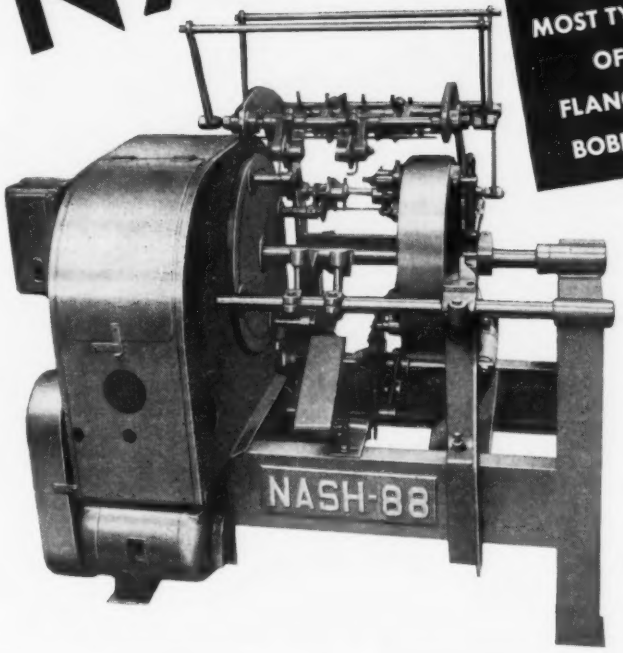
Cleveland L. Adams has been appointed technical director of Lanett unit of West Point Mfg. Co., Lanett, Ala. He has been associated with research division of West Point, as head of processing department, for number of years.

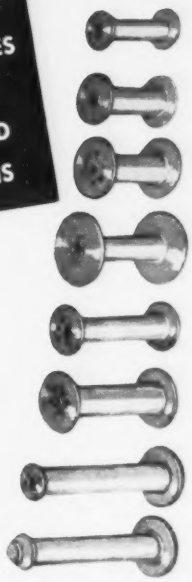
D. Costner is now director of research for Rock Hill Printing & Finishing Co., Rock Hill, S. C.

William L. Craven, former general manager of Plaid, Mayfair, and Bellemont branches of Burlington Mills Corp.,

the New NASH "88" Automatic BOBBIN REFINISHER

HANDLES MOST TYPES OF FLANGED BOBBINS





● Keeps your bobbins in perfect condition. Abrasive action takes place on barrel portion inside of flanges and top radius of flanges. Separate burnishing of flanges produces a highly-polished surface, assuring a better run-off of yarn. This New Nash "88" sands and burnishes *10 bobbins per minute* to a fine finish of uniform quality. Saves labor, requires minimum setup time . . . low maintenance cost. *Pays for itself quickly*. The No. "88" has all the qualities of our larger bobbin refinishers, but is designed for textile mills requiring less capacity.

Write for complete descriptive literature

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Machine and Hand Knitting

Yarns

[French-Bradford]

for

BATHING SUITS
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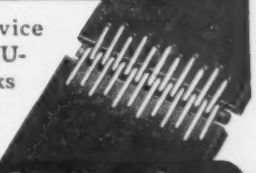
Complete color assortments

American Woolen Company

225 Fourth Avenue **New York**

for Better Belt Joints

To keep belts in service longer, use only GENUINE Clipper Belt Hooks applied with Clipper Belt Lacers.



use Clipper Belt Hooks

Clipper Hooks are made of the finest quality wire—BETTER than ever before—produced for our exclusive use. Hooks hold with firm, sure grip—give longer satisfactory service.

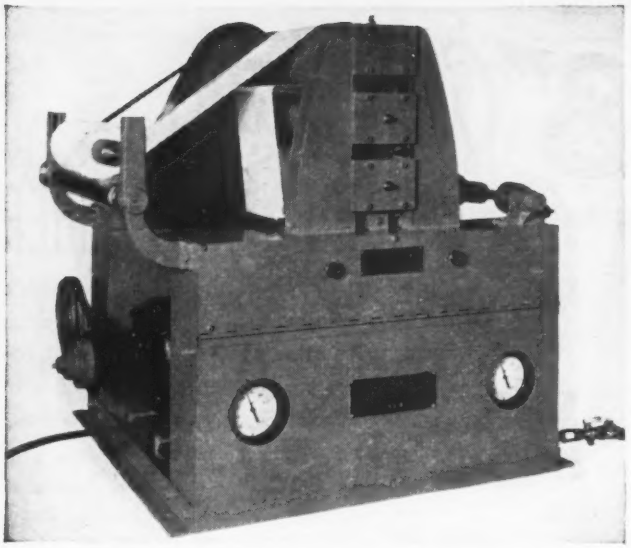
and Clipper Belt Lacers!

The Clipper No. 9 Portable Lacer laces belts up to 6 inches wide in one quick, easy operation. Under powerful pressure hook legs are embedded flush with the surface of the belt and points clinched, making a perfect joint. Phone your mill supply jobber for a demonstration!

CLIPPER BELT LACER COMPANY, GRAND RAPIDS 2, MICHIGAN, U.S.A.

Clipper BELT LACING EQUIPMENT

UL RECOMMENDED SERVICE



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Don't tie up production machines. Use the 3-Roll Butterworth Laboratory Pad to test formulas or match colors. Stainless steel box is sectionalized to permit variation in chemicals. Speed range — 7½ to 15 yards per minute.

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With the reputation as progressive processors for the hosiery and knitting trades built since 1893, Heineman cannot afford to give you less than the best in service. You are invited to join our long list of satisfied customers and have your nylon, silk and rayon yarns processed here.

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PEN WILSON COMPANY • 617 JOHNSTON BUILDING • CHARLOTTE, N. C.

NEWS ABOUT MEN

Burlington, N. C., has been made group manager of four spun-weaving plants of company at Rockingham, Mooresville, Franklinton, and Newton, N. C., with headquarters at company's main offices at Greensboro, N. C. **Thomas S. Tolar,** superintendent of Central Falls plant at Asheboro, N. C., has been made general supervisor of Plaid, Mayfair, and Bellemont, also continuing in his executive capacity at Central Falls; and **Finley Stewart** has been promoted from assistant superintendent to superintendent of Central Falls under Mr. Taylor's supervision.

William E. Wyche, formerly general manager of spinning and weaving mill of W. J. Voit Rubber Corp., Gastonia, N. C., has been named Southern representative of Coleman & Co., New York, N. Y.

V. H. Bruneau, who has been manager of Canadian Cottons Ltd., Milltown, N. B., for last 15 yr., has been appointed to position in company's head office in Montreal.

L. McCorkle Caldwell, superintendent of Hoover Hosiery Mills, Inc., Concord, N. C., since 1940, has been elected vice president and secretary of company.

Erwin O. Kruegel, formerly with Francis Willey & Co., Boston wool firm, has been named wool technologist in Research Development Branch, Office of Army Quartermaster General.

H. W. Douglas, production manager of Courtaulds (Canada) Ltd., Cornwall, Ont., will be in charge of new viscose plant now being erected by that firm in Cornwall. He will continue in charge of all yarn production.

Gerald B. Fletcher, formerly associated with Bibb Mfg. Co., Macon, Ga., has joined staff of A. French Textile School of Georgia School of Technology, Atlanta, Ga., as associate professor in textile engineering.

Albert Newell, of Portland, Ore., has been named superintendent of new worsted yarn plant being started in Strassburg, Va., by D. W. Knitting Mills.

Harold Lewis, formerly with Burlington Mills Corp., Statesville, N. C., has been appointed superintendent of Empire Knitting Mills, Statesville, succeeding **Arthur Rodiquez,** who has become associated with textile business in Lima, Peru.

Alfred Govin, superintendent, and **James Mansfield,** overseer of carding, have left Lebandale Mills, Lebanon, N. H., to join Malden Spinning & Dyeing Co., Malden, Mass.

Philip S. Grill will be superintendent of new plant of Waldensian Hosiery Mills, Lenoir, N. C. He was formerly superintendent of Blackstone Hosiery Mills, Valdese, N. C.

George Buchanan has been appointed assistant general manager of Nebel Knitting Co., Charlotte, N. C.

Ronald B. Hulse, formerly with Southern Asbestos Co., has accepted position with Nebel Knitting Co., Charlotte, N. C., as comptroller.

Fred Allen, formerly general manager of Gastonia unit of Bloom Mills, Inc., has been appointed plant superintendent of Bloom Mills of Lancaster, Ltd., Lancaster, Pa.

William Triplett, of Burlington, N. C., formerly with Burlington Mills Corp., will join Pomona Mfg. Co., Greensboro, N. C., in April, as chief chemist and superintendent of dyeing and chemical operations.

Terrell Wilkinson, formerly with Callaway Mills, La Grange, Ga., is new cost accountant for Pomona Mfg., Co., Greensboro, N. C., and **D. J. Moncus,** formerly with maintenance department at Callaway Mills, has become master mechanic at same plant.

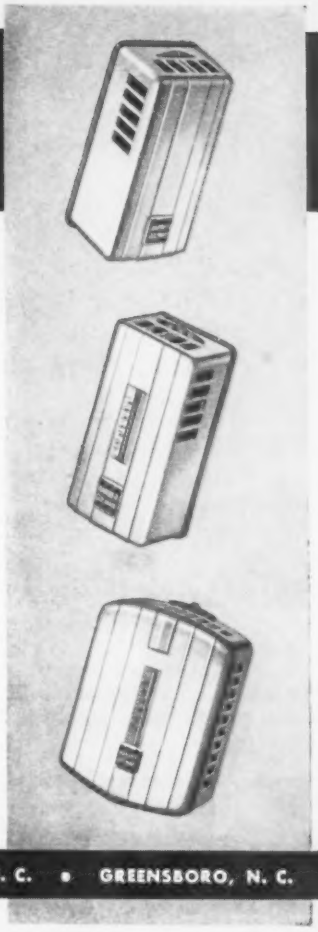
R. W. Koch, assistant superintendent and production manager of Pomona Mfg. Co., Greensboro, N. C., has been promoted to superintendent.

Robert W. Linscott, assistant general superintendent of Lincoln Mills of Alabama, Huntsville, Ala., has been promoted to assistant treasurer. He will be associated with office at Boston, Mass.

Dave McCollum, designer for Pomona Mfg. Co., Greensboro, N. C., has taken over production control of company, as additional duty.

Milton W. Harlow, formerly superintendent of Whit-

BARBER-COLMAN
TEMPERATURE CONTROL EQUIPMENT



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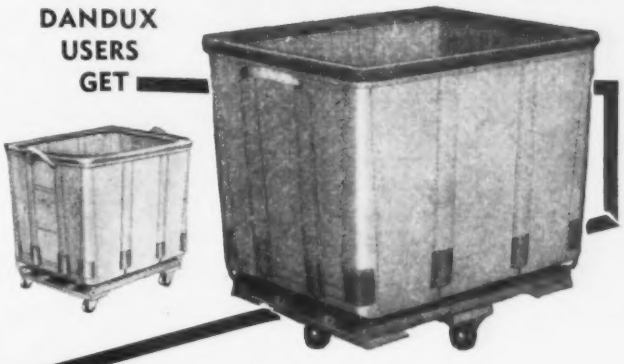

HIGHER EFFICIENCY in labor handling
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SAFER EQUIPMENT that lasts longer and cuts handling damage

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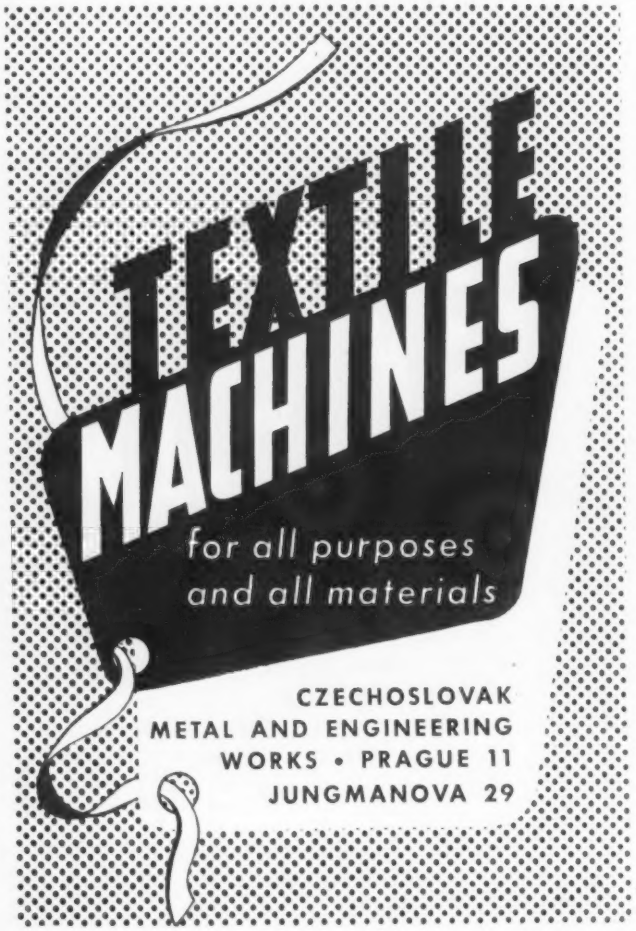


tenton Mfg. Co., Taunton, Mass., has been appointed company agent. He replaces **Ernest K. Vanderwater** who has retired after 22 yr. of service.

Richard M. Johnson, formerly with Hender Mills, Paterson, N. J., is now superintendent at Franklin Finishing Co., Paterson.

A. McDuffie has become superintendent of Carolina Mills, Weldon, N. C., subsidiary of Carolina Mills, Dillon, S. C. Mr. McDuffie was formerly with Jennings Cotton Mills, Lumberton, N. C.

B. W. Barrier has become superintendent and vice president of Carolina Fine Fabrics, Inc., Hickory, N. C., succeeding **E. J. Wentz.**

Culver Batson has become night superintendent of Riverside Div. of Dan River Mills, Danville, Va.

Robert G. Blake is now superintendent for Tower Woolen Mills, owned by Ziock Industries, Inc., at Rockford, Ill.

George E. Bon-Durant has been appointed superintendent and general manager of Guild Northland Mills, Laconia, N. H. He was formerly with fabric division of Oregon Worsted Co., Portland, Ore.

A. J. Bonner, formerly with research department of American Viscose Corp., has become general superintendent of worsted division of Spun Fibers, Inc., Whitnel, N. C.

Horace Lanan, woolen-yarn superintendent, has left Malden Spinning & Dyeing Co., Malden, Mass., and is now with Wynona Fabrics, Manayunk, Philadelphia, Pa.

Obituary

Warren P. Seem, 76, silk expert, died Mar. 14. Mr. Seem was for 26 yr. affiliated with Julius Kayser & Co. as head of its silk throwing department. Prior to joining Kayser, he worked for Schwartzenbach & Huber, Klotz Throwing Co., and Bethlehem Silk Co. He was a pioneer in the scientific testing, classification, and preparation of silk. He originated and introduced many of the currently used machines and methods. Since retiring, he had been engaged in a scientific study of hosiery fitting and utility with U. S. Testing Co.

E. Richard Meinig, 73, founder of E. Richard Meinig Co., Reading, Pa., died Mar. 13. He began business in Reading, Pa., in 1905 with the late George D. Horst, one of the founders of Nolde & Horst Hosiery Co. Mr. Meinig went into business alone a few years later.

George Parker Entwistle, 76, pioneer textile executive of the Carolinas, died Mar. 8 in Rockingham, N. C. He was former president of Pee Dee Mfg. Co. and of Entwistle Mfg. Co. He retired when he sold his interest in both companies several years ago.

Harvey E. Herr, 80, president of the Herr Mfg. Co., Buffalo, died recently. In 1914, he and his brothers founded the firm which manufactures accessories for silk, cotton and woolen mills.

Clarence Stimpson, Sr., 67, founder and president of Stimpson Hosiery Mills, Statesville, N. C., died recently.

Sidney C. Erlanger, 64, chairman of the board of B.V.D. Corp., New York, died Mar. 31. He became president of the firm in 1917 and board chairman in 1935.

Samuel Hodges McGhee, 74, Greenwood, S. C., formerly for several years president of Panola Cotton Mill, Greenwood, and also president for a time of Joanna Cotton Mills, Goldville, S. C., died recently.

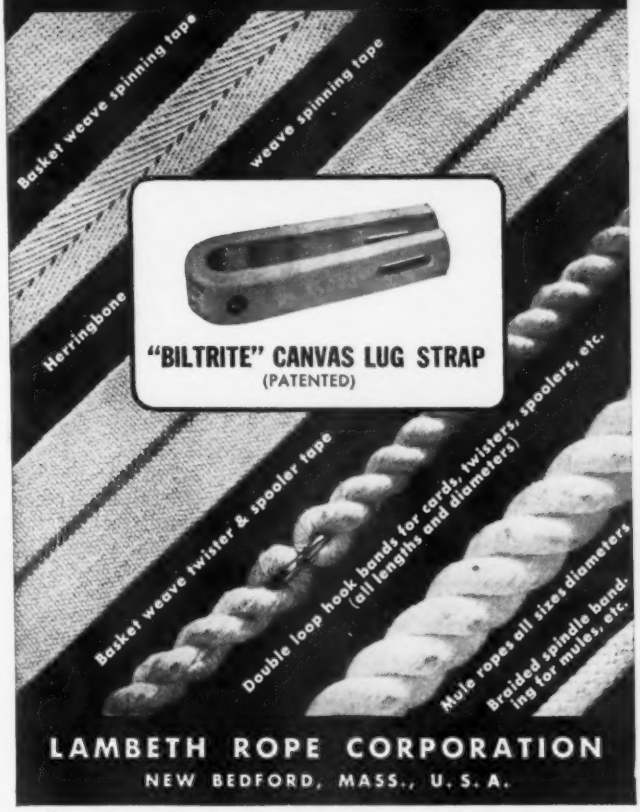
Joseph K. Priest, 57, president and treasurer of the American Shearer Co., Nashua, N. H., died in that city on Apr. 6.

Fred O. Tyler, 64, president of Anniston Mfg. Co., Anniston, Ala., died Feb. 23.

Mrs. Ashby Lee Baker, 73, president of Virginia Mills, Swepsonville, N. C., died Mar. 16. She had been president of these mills for 15 years.

Ernest L. Rodman, 83, president since 1916 of the Rodman Mfg. Co., North

LAMBETH PRODUCTS
FOR SPINNING, TWISTING, SPOOLING, WEAVING


Basket weave spinning tape
weave spinning tape
Herringbone
"BILTRITE" CANVAS LUG STRAP
(PATENTED)
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle banding for mules, etc.

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Cotton yarns, single and ply
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Colored yarns and warps
Spun rayon—yarns and warps

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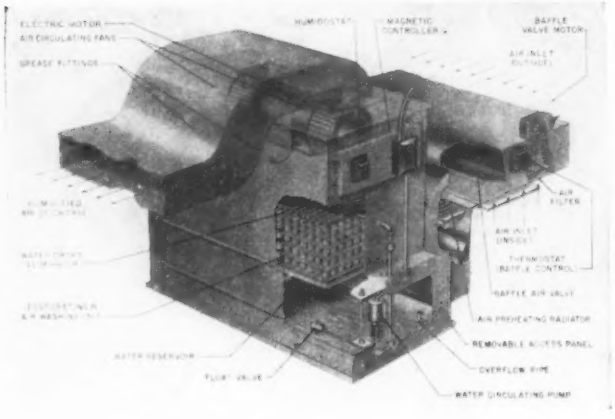


Offers All-Year-Round Air-Conditioning.

It filters, washes, humidifies, heats—and cools during the summer months by means of evaporation when air is taken from outside.

Mills using AIR-PERME-ATOR claim they have from 7 to 10° F lower temperature inside than outside. AIR-PERME-ATOR is easy to install and operates at little cost. The users of the AIR-PERME-ATOR have called it "Dry Humidification" as no free moisture is released.

Additional specialty equipment is now available for conditioning fabrics when processing to use on driers in dye houses and in sewing, shearing and pressing departments.

Full descriptive folder is now available on the cold process evaporative system.

AIR-PERME-ATOR MFG. CO.

300 Preakness Avenue **Paterson, N. J.**

RUGGED

Canvas Baskets, Hampers, Trucks

Built for years of service

NEWS ABOUT MEN

Kingstown, R. I., died on Mar. 3. He was born in Lafayette, R. I., and became president of the textile company upon the death of his uncle, Albert Rodman.

Fred A. Carter, 78, president and treasurer of American Textile Woolen Co., and also vice president of Sweetwater Hosiery Mills, Sweetwater, Tenn., died recently.

Chas. A. McCormick, founder of Riverside Silk Mills, Galt, Ont., died at his home in Paris, Ont., recently. Coming to Paris when a youth, he learned the textile trade with Penmans, Ltd. In 1915, he and his brothers established Riverside Silk Mills of Galt, with which he was associated until his retirement a few years ago.

Joseph M. Rittenberg, 69, a partner in Rittenberg Bros., New York, wholesale woolen dealers, died Mar. 22.

William C. Napier, 82, who retired from business as a knitting mill sales agent about 20 yr. ago, died Mar. 17. He was a senior member of the firm of Napier & Herrick, New York, when he retired.

John F. Jervis, formerly president of Springfield Blanket Mills, Springfield, Tenn., died recently.

Charles Edward Summer, 89, Newberry, S. C., who was associated with his brother in the organization and building of Mollohon Cotton Mills, Newberry, died recently.

Solomon Kendrick, 75, Easthampton, Mass., formerly superintendent of United Elastic Corp., died Mar. 18. Mr. Kendrick had been associated with elastic webbing plants in Lowell, Middletown, and Ansonia, Conn.; Granby, Quebec; and Rochester, N. Y. His last position was as superindent of the Easthampton Div. of United Elastic Corp.

Lester Durrett Coltrane, Concord, N. C., a vice president of Linn Mills Co., Landis, N. C., died recently.

Ernest Montgomery, 87, former textile mill superintendent at Summerville, Ga., died Mar. 3. He spent 52 yr. in the textile industry and promoted the building and equipping of several mills in LaFayette, Carrollton, Rome, Columbus, Miss., and Summerville, Ga. The Montgomery Knitting Mill, of Summerville, was named for him and he served as first treasurer and manager and was superintendent.

William A. Bohne, 51, assistant director of plants for E. F. Houghton & Co., Philadelphia died recently.

Arthur S. Lister, superintendent of Colored Worsted Mills, Providence, R. I., died at Pawtucket, R. I., recently. He was born in Miltonvale, Kan., and had been with the company about 30 yr.

James E. Coburn, 79, vice-president and treasurer of American Bobbin Co., Lewiston, Me., died recently at Lewiston, Me. Mr. Coburn previously served as agent of the Androscoggin Mill from 1911 to 1929.

Walter B. Hall, 79, former executive of Warren Cotton Mills, West Warren, Mass., died Mar. 15. In 1918 he became manufacturing agent of Whitman Mills. Later he was agent of the Saco Mfg. Co., Saco, Me.

Walter J. Schappa, 49, export manager of Grasselli Chemical Dept. of E. I. du Pont de Nemours & Co., died Mar. 14. He had been with Du Pont since 1921.

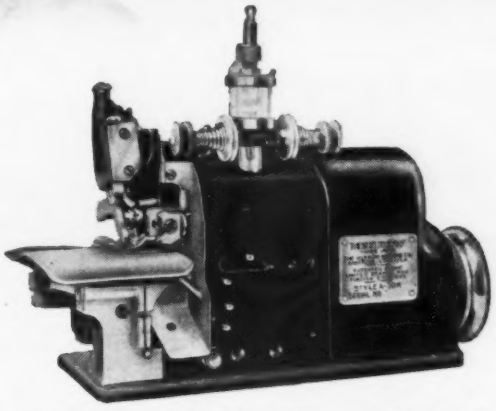
George R. McAuslan, 82, a pioneer in the manufacture of women's full-fashioned hosiery, died Mar. 25. From 1892 to 1895 he operated the Chemnitz Hosiery Co., Providence, R. I.

Fred Powell Thornton, 82, formerly manager of Clark Blanket Co., and later founder of Dundas Woolen Mills, Dundas, Ont., died recently in Dundas. He retired from business about three years ago.

Donald B. Osborne, 60, vice president and manager of Broad River Processing Co., Asheville, N. C., died recently.

Samuel M. Samson, 74, a stationary engineer for nearly a half century, who retired Jan. 1, after having served 22 yr. with the Patchogue-Plymouth lace mills, Patchogue, N. Y., died Mar. 19.

William W. Stewart, 58, a director, vice president and treasurer of Southeastern Cottons, Inc., New York, died Mar. 29.



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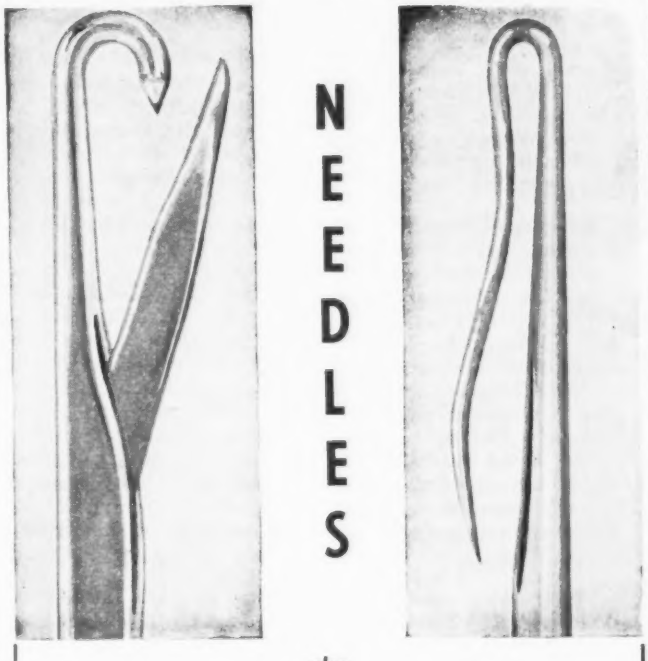

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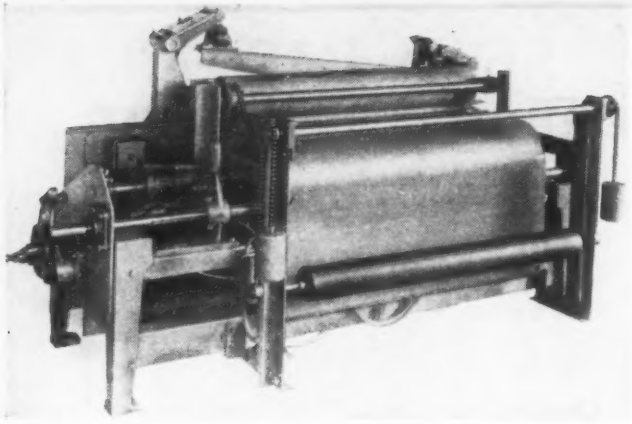

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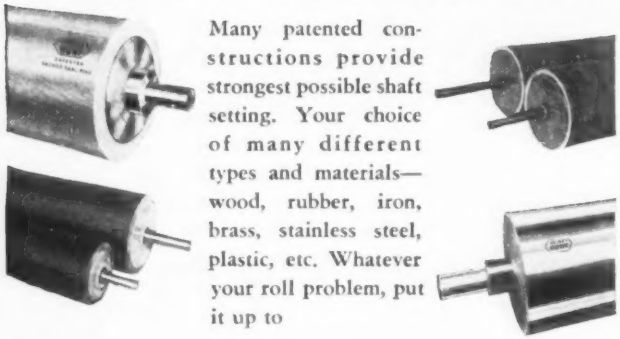

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NEWS ABOUT *Mills*

Cotton Mill News

Beaumont Mfg. Co., Spartanburg, S. C., has extensive modernization program going forward that includes installation of 134 looms in new No. 5 weave room, with 85 looms already in operation; expansion of cloth room; installation of 20 twisting frames; modernization of major portion of filling frames. American Moistening Co., Charlotte, N. C., is installing new system of air change and humidity control.

Belle Vue Mfg. Co., Hillsboro, N. C., is installing 24 new Whitin cards and three new H & B automatic pickers. Six new drawing frames already have been installed, and are in operation.

Calhoun Mills, Calhoun Falls, S. C., has completed two-story, windowless addition to boost mill's manufacturing space by about 40,000 sq. ft., or 20%. New building will be used for carding and spinning, and several months will be required for installation of air conditioning and other equipment. When enlargement program is completed 10,000 spindles will be added, bringing total to 59,200.

Caroleen Mills, Inc., Maiden, N. C., plans installation of about 50 new looms in one-story building, recently completed. Work is under way on another one-story structure, to be equipped for bleachery.

Conestogo Cotton Mills Co., Lancaster, Pa., will be known as Bloom Mills of Lancaster, Ltd. New setup has been organized as part of Bloom Mills, Inc., Gastonia, N. C. Fred Allen, former superintendent of Bloom Mills at Gastonia, is plant superintendent; and Emanuel Goldwyn, comptroller. About 560 looms have already been installed as part of modernization program, which will eventually include from 1,200 to 1,500 looms.

Dennis Yarn Mills, Inc., newly formed corporation, has been set up to take over Jennings Cotton Mills in Lumberton, N. C. Mill will continue to operate under same management as before.

Evangeline Textile Mills has been formed by citizens of Evangeline Parish, La., and capital stock of $2,500,000 has been subscribed. Bids are asked for construction of $200,000 mill building, with mill operation scheduled to start next January. Mill will employ between 600 and 800 persons and will be located at Redell, about ten miles from Ville Platte, La. It will have about 25,000 spindles, and will manufacture unbleached cotton goods, seersuckers, and denim.

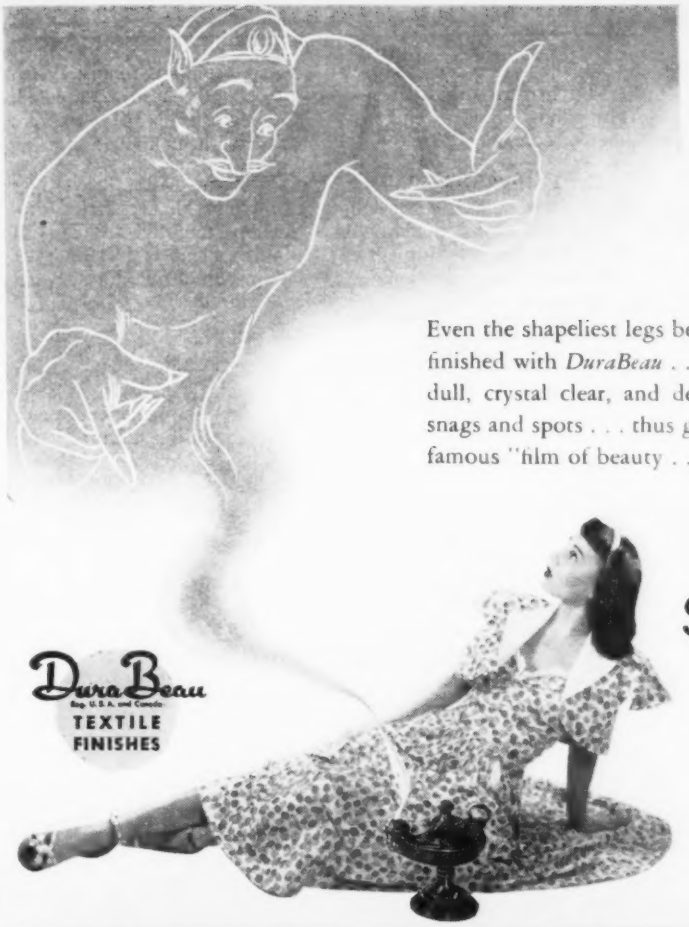
Hart Cotton Mills, Inc., Tarboro, N. C., will install 21,000 additional spindles, and 400 additional looms. Carding and spinning machinery is to be furnished by Saco-Lowell Shops, and plans are being prepared by J. E. Sirrine Co., Greenville, S. C.

Hayes Lace Works, Warwick, R. I., has work well under way on three mill additions, and has called for estimates on radiant heating. Louis Sampson, New London Ave., West Warwick, has general contract.

Judson Mills, Greenville, S. C., formerly separate corporation, has been merged into Cotwool Mfg. Corp., which in turn, is part of organization of Deering Milliken & Co., Inc., New York, N. Y. Plant will be known as Judson Mills Div. of Cotwool Mfg. Corp.

Monroe, N. C.—Large weaving mill will be established in Camp Sutton area, near Monroe, to manufacture broadcloth. Operations are expected to begin within immediate future, as soon as machinery can be moved and installed. Owners of mill have similar plants in Pennsylvania, New York, and one in South. Sixty looms will be put into operation at once.

New Bedford Textile Co., New Bedford, Mass., has been sold to John W. Ruggles Co., New Bedford. Sale follows death of two executives of New Bedford Textile Co., Seth J. Besse, president, and Charles



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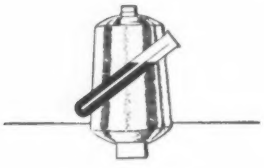

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L. Gidley, treasurer and general manager. John W. Ruggles is now president and treasurer of company.

Orr Cotton Mill, Anderson, S. C., has completed installation of 400 looms on additional floor made possible through excavation below main building.

Pacolet Mfg. Co., Pacolet, S. C., has completed installation of complete opening-room machinery in No. 3 unit. Equipment for No. 5 unit opening room is expected to be installed soon, as well as new drawing and roving frames, and warp-spinning machinery. Card-room machinery in No. 3 unit is to be revamped, and five new shearing machines will be installed in cloth room.

Patchogue-Plymouth Mills Corp., Patchogue, L. I., N. Y., plans one-story addition. Contract is being let for structural-steel framing, and construction will begin soon.

Piedmont Processing Co., Charlotte, N. C., is planning plant addition to house about 10,000 spindles and complementary equipment.

Reeves Bros., Inc., New York, N. Y., operating Eagle & Phenix Mills, Columbus, Ga., plans improvements and expansion of plant. Additional equipment has been installed, reported to have cost over $300,000.

Roxboro Cotton Mills, Roxboro, N. C., which operates plants at Longhurst, N. C., and East Roxboro, N. C., is razing old building preparatory to erecting four-story structure.

Samarkand Rugs, Inc., Rock Hill, S. C., has rejected bids recently received for one-story addition, and will have revised plans prepared. New bids are expected to be asked soon. J. N. Pease & Co., Charlotte, N. C., is architect.

Spartan Mills, Spartanburg, S. C., is constructing brick building to provide space for central station humidifying and evaporative cooling system. Company is also installing new system of automatic slasher controls and drives.

Valley Mills, Inc., Siluria, Ala., is spending $300,000 on expansion program now under way. Buildings are being expanded, and new equipment is being installed in opening, carding, and spinning rooms. When project has been completed, 150 looms and 7,500 spindles will have been added.

Walmore Mills, Inc., Kings Mountain, N. C., started production recently on Turkish towels. Plant is installing 95 looms with jacquard heads, and will employ from 75 to 100 persons on two-shifts.

Woods Mfg. Co., Ltd., Montreal, Que., spent $1,888,000 on improvements and plant expansion during 1947, and has ear-marked $850,000 for similar purpose in 1948.

Wool Mill News

Alderman Top Mfg. Co., Holyoke, Mass., has changed name to Hart Top Mfg. Co., Inc. Organization will continue, as in past, to comb wool on commission basis. Stanley Wilkinson is new president, and John W. Chapman, new secretary.

Alexander Smith & Sons Carpet Co., Yonkers, N. Y., has let contract to Turner Construction Co., New York, N. Y., for one-story branch unit on West 66th St., Chicago, Ill. Building will contain 116,000 sq. ft. of floor space, and cost over $750,000 with equipment.

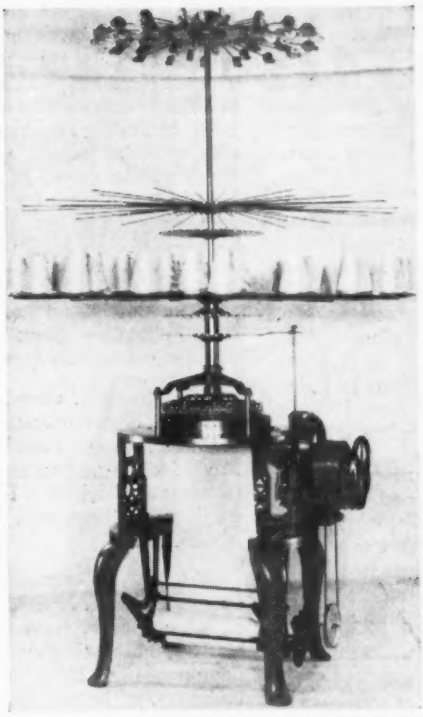
Atlas Felt Co., Canal Street, Westerly, R. I., has been sold to concern in Glenville, Conn.

Blue Ridge Weavers, Tryon, N. C., has purchased mill and business of Home Weavers, Tryon, operated by B. G. Foster, and will consolidate production of both plants.

Brisbane Fabrics, Inc., Woonsocket, R. I., has gone into full operation on manufacture of woolen and worsted fabrics. Benoit Hazebrouck is president and treasurer.

Canterbury Industries, Inc., Tilton, N. H., has recently been organized to manufacture worsted gabardines. Owners, Lee Aleyner and Louis F. Carmadella, both of New York, N. Y., recently purchased equipment of former Heywood Mills in Tilton.

Cleveland Worsted Mills Co., Cleveland, Ohio, has ordered 24 additional Warner & Swasey pin drafters, as part of $5,000,000 expansion program. Organization will also change all drafting in mill at Ravenna to newly developed machines.



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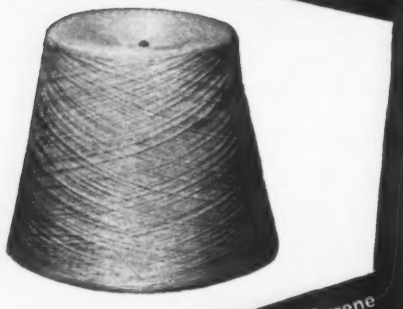

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NEWS ABOUT MILLS

Desmairais Weaving Co., Forestdale, R. I., has been taken over by W. E. Lauzon of Woonsocket, R. I., and is now in full operation on commission weaving of woolen and worsted fabrics.

Georgia Power Co., through its community development division working in cooperation with newly-formed Lavonia Industrial Association, is planning to build plant costing about $500,000 at Lavonia, Ga., for manufacture of upholstery fabrics. About 200 persons will be employed.

Hayward-Schuster Woolen Mills, Inc., East Douglas, Mass., is in midst of $1,750,000 expansion program, main feature of which is installation of semi-mechanical, continuous and straight-line finishing plant.

Huntington Yarn Mill, Philadelphia, Pa., has purchased former plant of Thompson Clearfield Corp. Machinery and equipment of present Huntington mill is to be moved to newly secured plant.

Lane-Hall Textile Co., Clifton Heights, Pa., has purchased building No. 2 of Victoria Plush Mills, Lenni Mills, Pa.; and has moved to latter location.

Macon Textiles, Inc., Macon, Ga., owned and operated by Uxbridge Worsted Co., Uxbridge, Mass., has put into operation its first completely equipped worsted spinning plant installed exclusively for production on so-called American system. Whitin worsted ring-spinning frames are installed. Warner & Swasey pin-drafting equipment is also being used.

Magee Carpet Co., Bloomsburg, Pa., plans two-story addition to cost about $175,000, with equipment. Ballinger Co., Philadelphia, Pa., is architect.

Manchester Woolen Mills, Inc., Hilliard St., Manchester, Conn., has been formed, and is now in production of woolen yarns, carpet yarns, and women's and men's wear woolens. W. Stanley Hill, former president of Hill Woolen Mills, Norwich, Conn., is president.

Marshall Field & Co., is discontinuing manufacture of woolen piece goods at mill at Spray, N. C. Carding and spinning machinery will be left in mill to produce yarns for company's rug mill. Woolen looms are to be moved to mill at Draper, N. C., to facilitate operations in manufacture of part-wool blankets. Finishing machinery from woolen mill at Spray will be moved to finishing plant, also located at Spray.

Southern Felt Corp., Morehead City, N. C., has let contract to Crain & Dembo, Inc., Durham, N. C., for new one-story mill. Cost about $100,000, exclusive of equipment.

Surr Mfg. Co., woolen yarn mill, has begun operations at Rochdale, Mass. President is Frederick Surr, former plant manager at Blackinton Div. of Blackinton Mills Corp., North Adams, Mass.

William Whitman Co., Lawrence, Mass., expects transfer of machinery from Monomac Spinning Mill Div. to Arlington Mills Div., already underway, to be completed by next fall. Mule spinning department will be moved first. Plans call for expenditure of about $5,000,000 to improve Arlington equipment, machinery, and working conditions.

Synthetic Mill News

American Bemberg Corp., Elizabethton, Tenn., reports that it has developed a continuous spinning process which eliminates all handling of its cuprammonium yarn until completely purified and dried, and reduces processing time from days to minutes. Already installed are machines to produce 850,000 lb. of yarn annually by this system. Converting plant to new system will cost about $6,500,000. About $1,000,000 has so far been expended on development.

American Viscose Corp., unit at Marcus Hook, Pa., expects, by late summer, nearly to double poundage of rayon which plant was producing at end of war. Plant is not only rehabilitating previously idle machinery, but is also preparing to put into production 50 surplus machines from plant of corporation at Front Royal, Va. Twelve machines have also been acquired from Defense Plant Corp.

Beaunit Mills, Inc., is building viscose filament yarn plant at Childersburg, Ala, with annual capacity of 10,000,000 lb. Power plant and water facilities have been leased from U. S. Government. Plans for con-

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struction of rayon plant have been completed, and orders for purchase of machinery have also been placed. Daniels Construction Co., Birmingham, Ala., has general contract, and Lockwood Greene Engineers, Inc., New York, N. Y., is engineer. Beaunit Mills has arranged ten-year, $7,500,000 loan for project. New plant is expected to be in operation by Jan. 1, 1949.

M. E. Binz & Co., Ltd., Montreal, Que., is proceeding rapidly with work on newly established Canada Label & Webbing Div., Montreal. When project is complete, 50 narrow-fabric looms will be in operation.

Century Ribbon Mills, Inc., New York, N. Y., has chosen Newport, News, Va., as site for new manufacturing plant.

Coast Mfg. & Supply Co., Livermore, Calif., has started production on glass marquisette and curtain fabrics. Company has been making safety fuse at Livermore since 1867, and addition of textile lines followed one year's research and engineering work. Equipment is now on order for manufacture of coated fabrics for awnings and outdoor furniture.

Consumers Textile & Mfg. Corp., New York, N. Y., will establish new textile enterprise in $75,000 building in Jacksonville, Ala.

Deering Milliken & Co., New York, N. Y., will build $4,000,000 rayon weaving mill in Anderson County, S. C. Mill will be windowless, one-room structure on 325-acre site near Pendleton, S. C., and will employ 400 people on three shifts. Deering Milliken also has plans under way for $250,000 addition to plant at Johnston, S. C. Company is also planning similar addition to unit at McCormick, S. C. Daniel Construction Co. is now working on plans for plants, which were both established in 1947.

Dominion Burlington Mills, Ltd., Montreal, Que., owned jointly by Burlington Mills Corp., Greensboro, N. C., and Dominion Textile Co., Ltd., Montreal, Que., has completed large-scale modernization and expansion at rayon-weaving mill in Sherbrooke, Que.

Freydberg Bros.-Strauss, Inc., New York, N. Y., has established plant in France for production of ribbons by cut-fused process.

Glass Fibers, Inc., Waterville, Ohio, has plans nearing completion for one-story, L-shaped addition to cost over $400,000 with equipment. Continental Industrial Engineering Co., Chicago, Ill., is architect and engineer.

Hafner Associates, Inc., Long Island City, N. Y., plans to establish new textile mill either in California or Texas.

Lavonia, Ga.—A. J. Barston, Midland Park, N. J., is having plans prepared by Eubanks-Caldwell, Inc., Boxley Bldg., Roanoke, Va., architect, for proposed new mill at Lavonia, to cost about $500,000 with equipment.

Rayotta Mill, Anderson, S. C., will soon finish construction of $300,000 plant. Ottaray Textiles, Inc., Anderson, S. C., will operate this new plant, and expects to install about $750,000 worth of new machinery.

Virginia Carolina Chemical Co., Taftville, Conn., is beginning production of Vicara, vegetable-protein fiber, on commercial scale in plant recently acquired by it from Aralac, Inc. Pilot plant has been set up to produce about 100 lb. per day. When in operation, new plant will have production capacity of 10,000,000 lb. per yr. W. Peterhorst is general manager in charge of protein-fiber developments.

Widder Bros., Lancaster, Pa., has let contract to A. P. Falcone & Co., Ardmore, Pa., for addition to mill. Cost reported over $100,000, with equipment.

Knitting Mill News

Apex Hosiery Co., Philadelphia, Pa., has let contract to Stofflet & Tillotson, Philadelphia, for alterations and improvements in three mill buildings, including installation of air-conditioning system. Cost reported about $100,000.

Artcraft Hosiery Co., Corinth, Mass., has completed arrangements with town officials for erection of addition to mill to be occupied under long-term lease. Structure will be owned by municipality.

Beaunit Mills Ltd., 176 John St., Toronto, Ont., has taken

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WAK INDUSTRIES
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over building on Davis Dr. East, Newmarket, Ont., and is equipping as branch plant. Toronto plant of Beaunit employs 250 operatives.

Browning Mills, Inc., has purchased large building at Bridgeport, Ala., for knitting mill, and will modernize plant. Mill will manufacture women's, men's, boys', and children's hosiery. C. P. Browning, Jr., is vice president.

Glenn Hosiery Mills, children's hosiery division of Melrose Hosiery Mills, High Point, N. C., has moved into new two-story, 50x175 ft. plant which is housing its boarding, finishing and shipping departments, together with office.

Julius Kayser & Co. plans construction of branch unit at Boydton, Va. New plant, which will have 10,000 sq. ft. of floor space, is expected to get into operation by fall.

Mauney Hosiery Mills, Inc., Kings Mountain, N. C., has completed $30,000 building which has added 5,000 sq. ft. of floor space. New machinery, installed at cost of $140,000, included 24 Banner wrap-reverse machines and 25 Komet links-and-links machines. Within six months, 25 additional links-and-links machines will be added.

McFadden Mfg. Corp., Martinsville, Va., has been merged into Sale Knitting Co., Inc., Martinsville, according to merger papers filed with Virginia Corporation Commission. Maximum authorized capital stock is $300,000.

Morristown Knitting Mills, Morristown, Tenn., has work going forward on installation of new unit of 75 machines for manufacture of boys' crew socks.

Nashua Hosiery Co. has started operations on third floor of building at Lowell and Argane Sts., Nashua, N. H.

Palmetto Full-Fashioned Hosiery Mills, Saluda, S. C., with authorized capital stock of $500,000, is in full-scale operation.

Textron, Inc., New York N. Y., is making plans to reopen plant at Lowell, Mass., within two months, with operations starting on small scale. Operation will be part of nylon-tricot program.

N. J. Watson Co. has established new knitting plant at 866 Dundas St., Woodstock, Ont., Canada.

Dyeing & Finishing Plant News

Joseph Bancroft & Sons Co., Wilmington, Del., revealed in report for 1947 that $1,135,000 has been spent on improvements and additions, and that $875,000 has been authorized for future expenditures.

Brooklyn Yarn Dye Co., Brooklyn, N. Y., is constructing warehouse as next step in improvement program. Last year all old equipment was replaced with stainless steel, and, when warehouse is completed, new dye house will be built that will add 40% to present skein-dyeing capacity.

Central Franklin Process Co., Chattanooga, Tenn., has let contract to Mark K. Wilson Co., Chattanooga, for one-story addition. Cost, reported close to $100,000, with equipment.

Dodge-Davis Mfg. Co. is moving finishing department from Bristol, N. H., to Hartford, Vt. Weaving department will remain in Bristol.

Fortune Bleach & Dye Works, Inc., Lumberton, N. C., new plant using Du Pont system of continuous bleaching and dyeing of knit goods, has started operations.

North Carolina Finishing Co. is finishing two-story addition to plant at Salisbury, N. C., and second addition to offices has been started.

Startex Mills Tucapau, S. C., has completed installation of modern stainless steel equipment in bleachery, and all machinery is now in operation at near capacity. New equipment makes possible output of finishing range of 200 yd. per min.

J. P. Stevens & Co., Inc., New York, N. Y., is reported to be planning textile finishing mill in vicinity of Kollocks, S. C., which will represent cost of more than $10,000,000.

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TEXTILE WORLD

SEARCHLIGHT SECTION

MEN WANTED

POSITIONS OPEN

SUPT, cotton dyeing, bleaching and finishing plant; woolen-worsted cloth mill supt. $10,000 to $15,000 year also asst. supts and designers; consultant on manufacturing problems for group of mills paying up to $15,000; carpet yarn mill supt; supt. weaving, warping, slashing, spun rayons and cottons $5,000-$6,000; worsted yarn supts. and asst. supts. (French and Bradford systems); production supt. coated fabrics; managers and supts. full fashioned silk hosiery mills in U. S. and foreign countries; supt. cotton weaving plant Draper Looms, drapery fabrics; pile fabric designers; cotton yarn supt. for So. Amer.; cotton cloth supt. large Southern mill. Asst. Supt. large worsted yarn and cloth mill; director and assistant director for training (South).

OVERSEERS for following departments: worsted carding, combing, drawing, spinning, twisting and winding; wet finishing; pile fabric and plush dyeing; woolen and cotton carding; woolen carding and spinning combined; woolen dyeing and finishing combined; rayon and cotton dyeing and finishing for mills in the United States and South America; finishing and knitting for knitted outerwear, Mid West; knitting on Wildman machines; bleaching and dyeing underwear; cotton spinning, one who can speak French and English for Canada; woolen and worsted finisher for demonstrating and selling; cotton jig dyeing. Overseers cotton spinning.

SECOND HANDS for cotton and woolen carding; cotton, rayon, woolen and worsted weaving; assistant foreman folding and putting-up. Second hands woolen-worsted yarn and piece dyeing.

CHEMISTS and COLORISTS for U. S. and So. Amer.; salesman who has sold to textile mills in Maine and N. H.; textile engineers paying up to $7500 year; electrical engineer (South); cost accountants; assistant designers, woolens and worsteds; third hand cotton carding; textile school graduate for raw stock woolen sample dyeing; cotton spindle setter.

LOOM FIXERS for U. S. and So. Amer.; Komet machine fixers; sewing machine fixers; mule fixers; jacquard loom fixers; worsted slasher operator.

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WANTED—BOSS Carder capable of taking complete charge of Card Room. Experience carding asbestos desired but not absolutely required. Salaried. Give experience, age and salary desired. Reply to P-4370, Textile World.

LARGE EASTERN paper company requires services of Personnel Administrator 25-45. Must offer extensive background of experience in contract and wage negotiations as well as managerial responsibility for employment, job evaluation, foreman training, welfare, safety and other plant personnel functions. This is an excellent opportunity for man of proven ability who wishes to expand his responsibilities with a large organization. P-4681, Textile World.

RESEARCH AND development in large Northern New Jersey concern. Man with 3 to 5 years' laboratory and mill experience with natural and synthetic fibers preferred. With reply state age, training, experience and submit references. P-4632, Textile World.

CHIEF ENGINEER for Viscose Plant. A large manufacturer of synthetic textiles has opening for chief engineer in new Mexican viscose plant. Applicants should be college graduates in Mechanical Engineering with three to five years experience in viscose plant maintenance. Chemical plant experience can be substituted for some of above. Man should be between thirty and forty, in good health with plenty of vigor. In applying please give full details of experience and salary requirements. P-4390, Textile World.

PRODUCTION SUPERINTENDENT for Viscose Rayong Plant. Large American Manufacturer of synthetic textiles has opening for production superintendent of new Potspinning plant in Mexico. Applicant should be College graduate, chemist or chemical engineer with actual operating experience in the viscose rayong field. Age preferably 30 to 40, good health, plenty of vigor. In applying please give full details of experience and salary requirements. P-4486, Textile World.

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SALES REPRESENTATIVES wanted to sell well known and quality lines of Industrial Chairs and Stools, Canvas Baskets and Trucks on liberal commission basis. Write Post Office Box 1933, High Point, N. C.

SALESMEN WANTED. Salesmen now contacting mills, wanted to represent mfr. of nationally known swatch file. Comm. basis. No objection to kindred lines. Write lines now carried and territory desired in first letter. SW-4409, Textile World.

POSITIONS WANTED

THROWSTER SUPT. Experienced in throwing rayon and silk crepe, rayon crepe, combination yarns, hosiery, schiffli, voile, and rayon organzine yarns, desires position with a reputable throwing concern. PW-4218, Textile World.

(Continued on page 308)

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PW-4653, Textile World,
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for the South American plants of a large American textile organization. Desire young graduate chemist to head up laboratory. Experienced in trouble shooting and textile finishing, and familiar with color and dyeing problems. Excellent opportunities for advancement as these are new plants. Write immediately giving background and training experience and personal qualifications so that interviews can be arranged.

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330 West 42nd Street, New York 18, N. Y.

WANTED
SHIFT DYER
TO TAKE CHARGE OF DYEHOUSE

for the South American Plants of a large textile organization, must be experienced in piece dyeing of cotton and rayon fabrics on Jiggs, Pads, and Becks. Excellent opportunities for advancement as these are new plants. Write immediately giving background and training experience and personal qualifications so that interviews can be arranged.

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10—40" Platt R.F. Cards
9—60" x 48" Smith, D & F and Cleveland 3-cyl. card sets, wooden cyls. with auto. feeders, breast. Apperley 2-bank condensers.
5—C&M Flock Cutters

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1—51" x 60" D&F 2-cylinder Iron Shoddy Cards with feeders
1—41½" Knit goods calender stainless steel rolls with motor Reeves drive
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1—60" Windle 3C Doubler, motor drive
1—64" P&W Doubling & Rolling-up Machine with clock
6—48" V. VL Stainless Steel Dye Jiggs Motor Driven
3—50" Henniken Stainless Steel Dye Jiggs Motor Driven

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10—Universal #50 Winders
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1—Abbott Cone Winder #64, 180 spindles
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8—72" Draper Model D Looms
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1—Ball Waper, 36" Entwistle
1—Twisting Frame, Prince Smith, 80 spindles, traverse 3", gauge 6"
4—Twisters, Prince Smith, 120 spindles 6" traverse, 3½" ring diameter
1—Dry Twister, F & J, 140 spindles, 3½" gauge, 3" ring, motor drive
8—Tricot machines, 28 gauge, complete
1—Woonsocket Slubber 11x5½, 90 spindles
1—Whitin Slubber 12x6, 72 spindles
5—Woonsocket Slubbers, 12x6, 68 spindles motor driven
2—Whitin Intermediates 9x4½, 96 spindles, motor driven
2—Fales & Jenks Spinning Frames, 208 spindles, 2" ring
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QUANTITY	SPACE	SHUTTLE	QUANTITY	SPACE	SHUTTLE
4	12	10 1/2"	3	28	4 1/2"
22	14	8 1/16"	1	32	3 7/8"
3	16	6 9/16"	2	34	3 3/8"
15	18	6 7/16"	1	36	3 5/8"
32	20	5 9/16"	1	40	2 11/16"
38	22	5 3/16"	1	84	
2	24	4 5/16"	5	30	

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8 REDRAWS . . . . .
U. S. Textile
80 Spindles,
Individually Motorized. Late Type Machines Complete In Every Detail

8 Looms - 52"
C & K - 30 Dobby
4 x 1
Motorized

17 FLETCHER 5-B SPINNERS . . .

All individually motorized 3 HP, 3 phase 220-440 volts, 60 cycles, 84 spindles, 5¼" spacing, 3⅛" Whitin rings, double 2" feed rolls. Excellent condition. Bobbin Equipment with machines.

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All individually Motorized 2 HP, 3 Phase, 440 Volts, 60 cycle motors. Bobbin Equipment with all machines.
4—100 spindle, 5¼" spacing, 3" Eadie rings, single 2" feed rolls.
4—112 spindle, 5¼" spacing, 3⅛" Whitin, single 2" feed rolls.

25 High Speed BAHNSON HUMIDIFIERS 1, 2, 3 phase ¼ H. P. Motors, 220 volts, 3450 R.P.M., H-J Type, Late Type Control

1 Universal Magazine Type 312 End Creel
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SLASHER DRYER Worsted Warps

ANDREWS & GOODRICH

2—Section—O. A. Demensions, 26' L. x 12'4" W. x 11'2" H. Rated capacity up to 800# dried warp per hr. at 100# steam pressure, @ 26 yds. per minute. Includes Motors Drive, Magnetic starters, switches, etc.

NEW—IN ORIGINAL CRATES.

ITEM—12571

66" Plush Shear

3 Cylinders—Parks & Woolson. Includes Dust Collecting Hoods over each Cylinder and, Perforated Metal Belt Guards.

ITEM N-S-B

New Wet Out Bowl, or, Single Bowl

Raw Stock Scouring—16'x48"
Pneumatic squeeze rolls.
New—In Original Package
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ITEM L-90

Vacuum Extractor Tolhurst

42" Lead Lined Basket

ITEM SM5654

Spinning Bobbins

Approx. 25,000, 5½ Tra Slotted Dixon Drive Base 1¾" x ½".

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For Saco-Lowell Frames

Enough to equip 10,000 to 20,000 Spindles less a few Miscellaneous Parts.
Used—but some a very short period.

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Stainless Steel Lined. Tank 36" Diameter by 54" deep—Single Spindle.

ITEM 12264

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ITEM 12418

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Made by American Tool & Machine Co.—Includes special Louis Allis 15 HP motor on main drive and auxiliary 1½ HP motor for treatment at low speed of 30 RPM with cycle control for reversing at low speed.

ITEM N-H

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DYE BECK, 2' Sample
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DYEING MACHINES, Smith Drum Pocket type
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EXTRACTOR, K&G 48" rubber lined basket
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JIGGS, 50" St. St. & rubber lined
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PRINT MACHINE, 10" sample & ribbon
PRINT MACHINES, 6 & 8 color, 60" Waldron
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2—Barber Colman Model "K" Portable Tying-In Machines. Equipped with B & C Knotter Heads.

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10—Whitin 12" Card Coilers, Excellent Condition.

30—Barber Colman High Speed Section Beams, 24" Heads, 12" Barrell, 54½" Between heads.

4—Draper Slow Speed Warpers and Creels, Motor Driven with Motor.

2—Barber Colman Drawing-in Machines, Style 2-SS, Motor Driven with motors.

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4—Sipp Warpers 84".

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80—Model "E" Automatic Draper 45½" Reedspace with lacey top for 5 shaft operation, motorized, electric stop motion, completely reconditioned with feelers and cutters.

1—Schaum Uhlinger 54" Extractor, 10 H.P. Motor.
Harness shafts, all sizes.
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20—Model K Automatic Draper Looms, 47½" Reedspace, 20 hook dobby, motorized, completely reconditioned with feeler and cutter.

20—#90 Universal Quillers and Coppers with and without bunch builders, completely rebuilt.

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9M—Automatic Quills 7⅜".

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1—Hand Loom, 110⅜" Reedspace.

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30—C&K 600 hook Double Lift Jacquard.
Eastwod and Sipp Warpers, 84", 72" and 60".
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6—Humidifiers.

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23—Model "E" Automatic Draper 53½" Reedspace with lacey top for 5 shaft operation, motorized, mechanical stop motion, completely reconditioned with feeler and cutters.

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1—B & S Yarn Reel.
1—B & S Grain Scale.
1—Foster #25 Double 60 spindles, 3 end up, motor driven.
1—NEW Clark 48" Mixing Picker.
1—Sargent Raw Stock Dryer 72"—2½ Sections with feeder.
1—2 Head Balling Grill Box for medium or coarse wool.

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TWO OILING ATTACHMENTS
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New, have not been taken from factory boxes. A-1 condition.

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1—Proctor and Schwartz 48" Shredder, with breast section, clothed 6 threads per inch.
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1—Crushing Machine consisting of 4 pair Steel Fluted Crush Rolls, 24" wide, 9" diameter.
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1—48", 2 Cylinder English Worsted Card, medium to fine wire.

FS-4617, Textile World
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FOR SALE

MACHINERY & SUPPLIES

6—H & B 40" Cards, 12" Coilers
6—Frames Lowell Spinning, Whitin Casablanca long draft, 2¾" Ga., 272 spindles each.
2—Lowell Twisters, 4" Ga., 3" ring, 180 spindles each
1—5 H.P. Century Motor, 1710 R.P.M., new 220 volts.
5—5 H.P. Century Motors, 1740 R.P.M., new 220 volts.
1—3 H.P. Allis-Chalmers Motor, 1700 RPM, new, 220 volts.

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Used Laboratory equipment for wet spinning of synthetic fibers, including Whitin Rotary Fibre Cutter, candle filters, metering pumps, plastic tapered Godet wheels, 5" x 8" Heresite coated Bobbins, spinnerettes.

New—1 Hungerford & Terry Water Softening Unit, gravity flow, 300,000 grains per regeneration; with spare parts.

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160 spindles, 3½ ring, 5 inch gauge, 8 inch traverse with 7½ H. P. motor drive complete in excellent condition.

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5—Saco-Lowell 36" Bale Breakers, 1919-1920 Model, one equipped with spira-whirl cleaner
9—Saco-Lowell Kitson 3-beater Single Process Pickers

CARDING

75—Saco & Pettee 40" R. F. Cards, 27" doffers, 12" coilers, belt driven
50—Pettee Machine Company 40" R. F. Cards, 24" doffers, 12" coilers, belt driven
68—H & B American 40" R. F. Cards, 26" doffers, 12" coilers, belt driven
80—Lowell 40" R. F. Cards, 28" doffers, 12" coilers, belt driven

DRAWING

113—Deliveries Saco-Pettee Drawing, metallic top rolls, 1⅜" bottom front rolls, 12" coilers, belt driven
48—Deliveries Woonsocket Drawing, 8-6 delivery frames, cork covered top rolls, 1⅜" bottom front rolls, 12" coilers, belt driven

COMBING

16—Whitin Model D-2 Combers, 12" coilers, belt driven
5—Whitin Ribbon Lap Machines
5—Whitin Sliver Lap Machines

ROVING

20—Saco-Lowell 12x6 Slubbers, 10¼" gauge, 60 spindles ea., shell front rolls
20—Saco-Pettee 12x6 Slubbers, 10¼" gauge, 72 spindles ea., shell front rolls
2—Saco-Lowell 11x5½ Slubbers, 9½" gauge, 60 spindles each
18—Lowell 11x5½ Slubbers, 9½" gauge, 60 spindles each
16—Saco-Lowell 10x5 Intermediates, 8" gauge, 84 spindles ea., shell front rolls
7—Saco-Pettee 10x5 Intermediates, 8" gauge, 84 spindles ea., shell front rolls
1—Saco-Lowell 9x4½ Intermediate, 7½" gauge, 84 spindles, shell front rolls
8—Saco-Pettee 9x4½ Intermediates, 7½" gauge, 104 spindles each
25—Lowell 9x4½ Intermediates, 7" gauge, 92 and 96 spindles each
9—Saco-Lowell 8x4 Speeders, 6" gauge, 136 spindles each, cork and leather top rolls
11—Woonsocket 8x4 Speeders, 6" gauge, 136 spindles each, shell front rolls
27—Saco-Lowell 7x3½ Speeders, 5½" gauge, 160 spindles each

SPINNING

20—Whitin Casablanca Long Draft Spinning Frames, Tape Drive, 4" gauge, 4—2" ring, 16—2¼" ring, 216 spindles each, 8" traverse
38—Whitin Casablanca Long Draft Spinning Frames, Tape Drive, 3½" gauge, 2" ring, 8—228 spindles, 14—204 spindles, 16—216 spindles, 8" traverse
15—Whitin Casablanca Long Draft Spinning Frames, Tape Drive, 3½" gauge, 1⅝" ring, 228 spindles each, 7" traverse
8—Whitin Casablanca Long Draft Spinning Frames, Tape Drive, 3½" gauge, 2" ring, 204 spindles each, 8" traverse
14—Whitin Casablanca Long Draft Spinning Frames, Tape Drive, 3¼" gauge, 1⅝" ring, 180 spindles each, 7" traverse
5—Whitin Long Draft Spinning Frames, Tape Drive, 3" gauge, 2-1/16 ring, 336 spindles each, arranged for motor drive

TWISTING

8—Saco-Lowell Tape Drive Twisters, 7" gauge, 5½" ring, 100 spindles each, 8" traverse, knee brakes, motor driven
4—Whitin Band Drive Twisters, 6" gauge, 4½" ring, 80 spindles each, 6" traverse, knee brakes
2—Fales & Jenks Tape Drive Twisters, 5" gauge, 4" ring, 172 spindles each, knee brakes, motor driven

11—Sets Whitin 50" Model F and Model E 2-cylinder Roller Top Woolen Type Cards, each consisting of 49" Bramwell Automatic Feeder, Metallic Breast, Breaker and Finisher Card, Scotch Intermediate Feed and Whitin 2-bank Tape Condenser, 72 ends, 1919 and 1925 Model

6—Sets Platt Bros. 50" 2-cylinder Roller Top Woolen Type Cards, each consisting of 49" Bramwell Automatic Feeder, Metallic Breast, Breaker and Finisher Card, Scotch Intermediate Feed and 2-bank Condenser, 72 ends, 1915 Model

3—Platt Bros. 50" Single Cylinder Roller Top Woolen Type Cards, with Bramwell Automatic Feeder, Metallic Breast, 1906 and 1914 Model

2—Davis & Furber Wool Ring Spinning Frames, Tape Drive 6½" gauge, 4" vertical ring, 144 spindles each, individually motor driven, 1941 Model

17—Saco-Lowell Tape Drive Twisters, 3" gauge, 1-11/16" ring, 216 spindles each, belt driven, 1918 Model

11—Collins Tape Drive Twisters, 4½" gauge, 3½" ring, 152 spindles each, 8" traverse, knee brakes, motor driven
3—Saco-Lowell Tape Drive Twisters, 4" gauge, 3" ring, 160 spindles each, 5½" traverse, knee brakes
18—Whitin Band Drive Twisters, 4" gauge, 2¾" ring, 1200 spindles each, 6" traverse, knee brakes
4—Fales & Jenks Tape Drive Twisters, 3½" gauge, 2½" ring, 248 spindles each, 8" traverse, knee brakes, motor driven
6—Fales & Jenks Band Drive Twisters, 3¼" gauge, 2½" ring, 208 spindles each, 7" traverse
18—Whitin Model B Tape Drive Twisters, 3¼" gauge, 2½" ring, 224 spindles each
2—Saco-Lowell Tape Drive Twisters, 3" gauge, 1-11/16" ring, 216 spindles each, 7" traverse
10—Draper Tape Drive Twisters, 3" gauge, 2¼" and 1⅝" ring, 240 spindles each, 7" traverse, knee brakes

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1—Saco-Lowell Slasher, 5' and 7' cylinders, friction drive, 66" headway, complete with controls
1—Saco-Lowell Slasher, 5' and 7' cylinders, positive drive, 79½" headway, with controls, hood, motors, etc.
1—Saco-Lowell Slashers, 5' and 7' cylinders, positive drive, 80" headway, with controls, hood, motors, etc.
1—Saco-Lowell Slasher, 5' and 7' cylinders, positive drive, 102" headway, with controls, hood, motors, etc.
1—Saco-Lowell Slasher, 5' and 7' cylinders, positive drive, 103¾" headway, complete with controls

LOOMS

40—Draper Model "K" 40" Looms, 45" reed space, belt driven
40—Draper Model "E" 40" Looms, 45" reed space, belt driven
50—C & K 4x4 box Looms, 42½" reed space, with 400-hook Jacquards, motor driven
20—C & K 3x3 box Looms, 42½" reed space, with 20-harness Gem Heads, motor driven
20—C & K 2x2 box Looms, 44" reed space, with 20-harness dobbies, motor driven
38—Draper Model "E" 50" Looms, 55¼" reed space, motor driven
102—Draper Model "E" 54" Looms, 59¼" reed space, motor driven
20—Draper Model "E" 56" Looms, 61½" reed space, motor driven
16—Draper Modified "D" 64" Looms, 69" reed space, motor driven
120—Draper Model "D" 66" Looms, 71" reed space, 12-harness C & K Worsted Heads, motor driven
24—C & K 4x1 box 68" Automatic Looms, 72" between swords, motor driven
120—Draper Model "H" 72" Looms, 77½" reed space, 8-harness side cams, motor driven
40—Draper Model "L" 78" Looms, 83½" reed space, motor driven
110—C & K 4x1 box 86" Automatic Looms, 91½" between swords, motor driven
30—Draper Model "L" 90" Looms, 99½" reed space, motor driven

MISCELLANEOUS

1—Minnich All Steel Waste Bailing Press, 54"x27"x72", directly motor driven
5—Kitson 38" F-2 Hopper Feeders
1—Kitson Card & Picker Waste Cleaner, with condenser
2—Murray Cleaners
1—Morton Automatic Distributor
1—Lummus Single Section Gyrator
2—Platt 6-cylinder Hard Waste Machines, 36" dia. x 22" face cylinders, all cylinders individually motor driven
1—Kitson 6-cylinder Hard Waste Machine, 30" dia. x 24" face cylinders, all cylinders individually motor driven
1—Whitin 3-cylinder Hard Waste Machine, 1927 Model
1—Cook Vacuum Stripping System, with Anglo-American Compressor, Size 22x8, motor driven
1—Saco-Lowell Vacuum Stripping System for 81 Cards, with Sturtevant Monogram Exhauster, motor driven
2—66" Parks & Woolson Shearing Machines, equipped with 3 rotary knives 66" long, manually controlled, belt driven

We also have available BLOWERS, MOTORS, SWITCHES, PULLEYS, HANGERS, MACHINE SHOP EQUIPMENT

1—48" Hermas Shearing Machine, equipped with four cutters, two up and two down, with Hermas Rolling and Sewing Machine

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(Continued from page 296)

GERMAN TEXTILE Engineer, age 29, experienced smapling, preparing and producting of K' thread and draw net cloth; knowledge spinning and cloth finish. Familiar with Refa methods and in supervision of rational working methods. Wish contact cloth-mill or wool weaving-mill. Excellent references. PW-4602, Textile World.

WEAVING SUPERVISOR. 18 years experience on synthetic crepe yarns. Practical knowledge of modern automatic silk looms C-K.S.6. Excellent teaching and administrative ability. Graduate Textile Design. Highest references. PW-4614, Textile World.

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TECHNICAL MANAGER of cotton cylinder spinning plant; Austrain; with tested innovations in the field of spinning technique; wishes to transfer to North or South America. PW-4454, Textile World.

TEXTILE ENGINEERING Graduate with 22 years experience all phases mill operations seeks position as Manager of mill. Used to and capable of hard efficient executive type work. Available July 1. References. PW-4703 Textile World.

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Complete Elastic Braid Plant
Over 3100 carriers now running all sizes, low wages, rent, power etc.
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SPINNING MILL
Two thousand spindles. Two sets of drawing. Electric power. Spin up to 2/36's; buildings 100% Sprinklered with 50,000 square feet additional for expansion. Excellent labor conditions. A few hundred miles from New York. Prompt possession. Will also consider sale of all machinery without buildings.
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OF ALL TYPES
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Our ROWBOTTOM cam cutting facilities are at your disposal for your cam requirements.

Let us have your inquiries.

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Capable of producing 10,000 lbs. of Nylon yarn weekly; 20-30-40 and 60 denier, with 10 to 30 turns per inch.
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WANTED BY MILL
15 to 100 Denier any quantity
Replies strictly confidential
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and
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Needed Immediately by Mexican Mill
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We need several #45 Universal Cone Winders or #24 Foster Cone Winders. Give complete details.
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Additional Wanted Advertising on opposite page

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2—Woonsocket Single Process Picking Systems, each with 2 plain and one Kirschner beater, 16", Motor Driven

30—Saco & Pettee Cards, 12" coilers, 100/110 Wire, with Saco Lowell Vacuum Strippers, Motor driven

28—Woonsocket Cards, 12" coilers, 100/110 Wire, with Saco Lowell Vacuum Strippers, Motor driven.

18—F & J Spinning Frames, 252 Spindles each, 3¾" Gauge, Tape Drive, Motor driven.

15—F & J Spinning Frames, 240 Spindles each, 3" Gauge, Tape Drive, Motor driven.

8—Saco & Pettee Spinning Frames, 228 Spindles each, 3¼" Gauge, Band Drive, Motor driven.

80—Saco & Pettee Spinning Frames, 224 Spindles each, 2¾" Gauge, Band Drive, Motor driven.

96—Draper Model E Looms, 51" Reed Space, Roper Let Off, Worm Take Up, 2 Shift Pick Counters, Motor driven.

32—Draper Model E Looms, 49" Reed Space, Roper Let Off, Worm Take Up, 2 Shift Pick Counters, Motor driven.

10—Draper Model E Looms, 43" Reed Space, Roper Let Off, Nutting Take Up, 2 Shift Pick Counters, Motor driven.

176—Draper Model E Looms, 41" Reed Space, Chain Friction Let Off, Worm Take Up, 2 Shift Pick Clocks, Draper Batteries, Motor driven.

16—Stafford Looms, 49½" Reed Space, Ratchet Let Off, Worm Take Up, 2 Shift Pick Counters, Draper Batteries, Motor driven.

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2—Saco Lowell Gear Driven Slashers, 5' and 7' Cylinders, 60" Headways, with 3 Saco Lowell Size Kettles and 2 Rotary Size Pumps. All Motor driven.

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FS-4731, Textile World
330 West 42nd Street, New York 18, N. Y.

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WANTED for 200 Draper "E" Looms

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1—40' 60" Winsor & Jerauld Tenter Frame, complete.
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2—56" Morrison enclosed gear copper lined Dye Jiggs
2—54" General enclosed gear S. S. line Dye Jiggs.
1—Set of 9—20" x 60" Heavy Steel Dry Cans.
1—Set of 6 copper cans, vertical, Reeves & motor.
1—Set of 7 copper cans, horizontal, Reeves & motor.
1—Set of 3 copper cans, 36" diameter by 60" face.
1—50" V. V. Button Breaker
1—48" Tolhurst Centrifugal Self Balancing Extractor, with motor on side.
1—36" motor driven self balancing Hercules Extractor.
1—60" V. V. M.D. Horizontal Extractor
2—60" motor driven beamers.
2—64" Van Vlaanderen Tubing & Doubling Machines, motor driven.
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3—No. 50 Universal Coners
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1—Sterling 7½ H. P. Vari-drive
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FOR PRODUCING MAXIMUM WIDTH AND ELIMINATING WRINKLES ON TEXTILE FABRICS AND PLASTIC FILMS, AND FOR EVENLY DISTRIBUTING TIRE CORD WARPS
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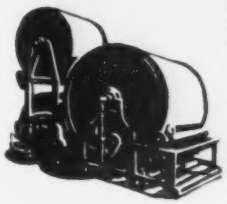

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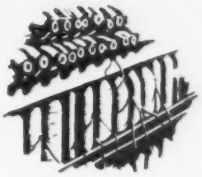

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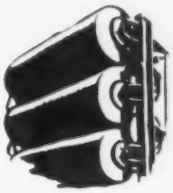

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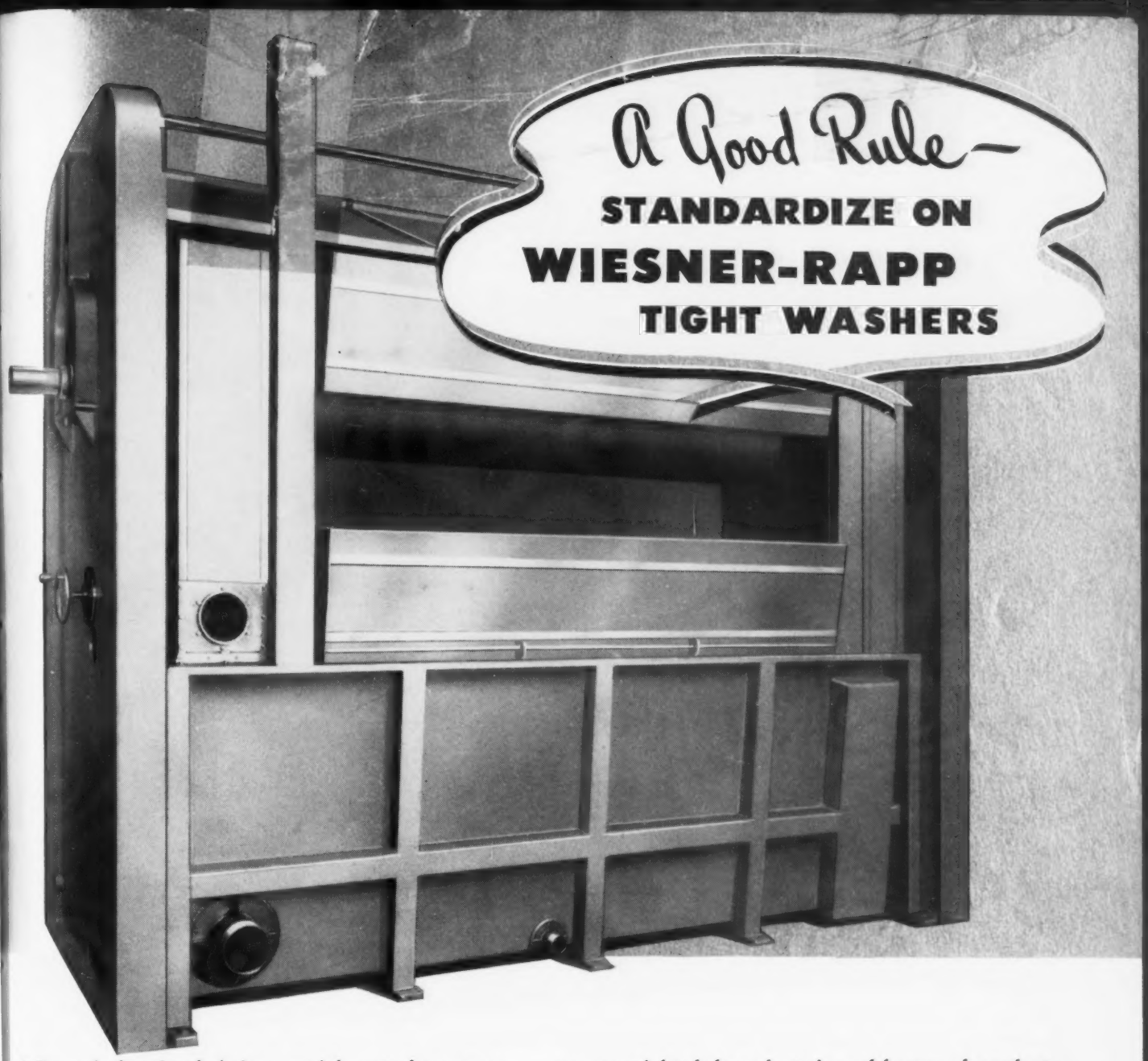

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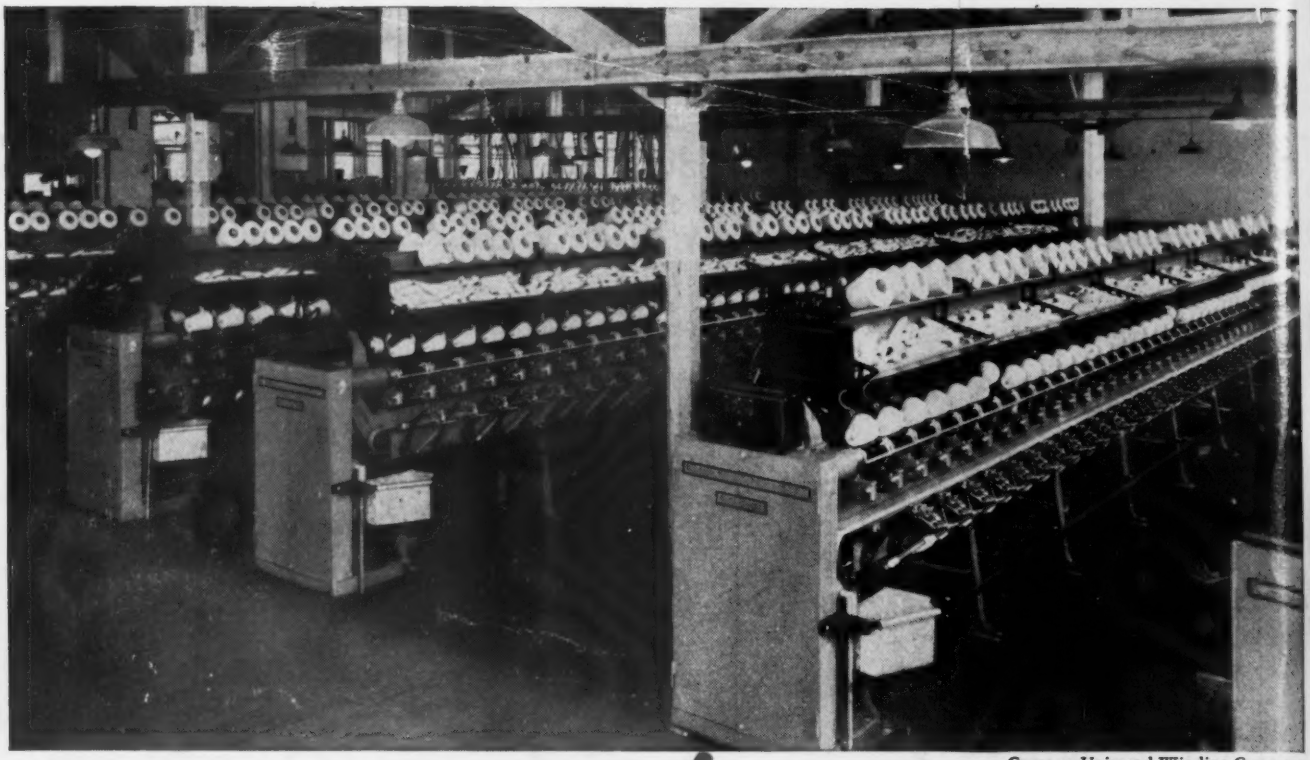

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